# 1NC---DRR---Round 2

## 1NC

### 1NC

T-Workers

#### ‘Workers’ are those in a formal employment relationship.

Jill M. Johanson 15, JD, Judge, Washington Court of Appeals, Department of Labor & Industries of the State of Washington, Respondent, v. Lyons Enterprises, Inc. dba Jan-Pro Cleaning Systems, Appellant, Court of Appeals of Washington, Division 2, No. 45033-0-II, 03/31/2015, Westlaw. [italics in original; language edited]

II. RCW 51.08.180—DEFINING WORKERS

6 7 20 Lyons argues that its relationship with its franchisees is not one of employer and worker but rather a bilateral contract between two independent businesses. Essentially, Lyons claims that it is a separate entity from each of its franchisees and that the franchise agreement establishes the • terms of their business relationship. Lyons argues that its franchisees are not workers because they can and do hire their own employees to do the work, meaning that their contracts with the franchisees are not for personal labor. L & I argues that Lyons' franchisees are covered workers because the franchisees serve a function that is indistinguishable from the function that an employee in a traditional cleaning service would perform. Lyons is partially correct—we hold that those franchisees who *actually* take on their own subordinates are not covered workers, but those franchisees who work alone are covered under the IIA. We affirm the superior court in part, reverse the superior court in part, and reinstate the Board's decision.

8 9 10 21 The IIA is meant to provide broad workers compensation coverage. See RCW 51.12.010 (“it is the purpose of this title to embrace all employments”) (emphasis added). In keeping with that goal, RCW 51.08.180 defines a worker as

*every* person in this state who is engaged in the employment of ... or who is working under an independent contract, *the* essence *of which is [their] ~~his or her~~* personal labor *for an employer*.

#### Violation: federal workers are not employees.

Ryan Vacca 19, Professor of Law at the University of New Hampshire School of Law, 2019, “Uncertainty in Employee Status Across Federal Law,” Temple Law Review, University of Kansas Libraries, Lexis

As such, only an “employer” may be cited for a violation of the act.172 Like with the NLRA and ERISA, the definitions in OSHA are circular. “Employer” is defined as “a person engaged in a business affecting commerce who has employees,” but not federal, state, or local governments.173 Unhelpfully, “employee” is defined as “an employee of an employer who is employed in a business of his employer which affects commerce.”174

#### Vote neg:

#### 1. GROUND. This Aff avoids every topic controversy: wages, benefits, strikes, and militant labor are unique to the private sector. Public unions are high and AFF thumpers are OP. Debate is only educationally valuable with an evenly split, debatable resolution.

#### 2. LIMITS. Federal workers blows the lid off the topic: too many niche agencies to track with common “bargaining key” themes AND no unified NEG generics.

### 1NC

T Substantial

#### A ‘substantial’ number of workers means 2%.

Dr. Julie M. Zissimopoulos 8, Ph.D. in Economics from the University of California, Los Angeles, Economist at the RAND Corporation, also with Lynn A. Karoly, “Labor-Force Dynamics at Older Ages”, Res Aging. 2008 Oct 3;31(1):89–111. doi: 10.1177/0164027508324642

Self-employment is an important phenomenon among workers nearing retirement. Among workers aged 51 years and older, just over 20% were self-employed during the interval from 1992 to 2002. Some of these individuals had been self-employed much or all of their working lives, whereas many older workers transition to self-employment after age 50 and, for some, as part of a transition to retirement. Indeed, using longitudinal data from the HRS, we document substantial changes in labor-force status and class of employment for older workers over a two-year time period. Approximately 2% of wage and salary workers became self-employed between the HRS waves. Among retired workers who returned to the labor force, about one third unretired into self-employment. Most unemployed or disabled workers who returned to the labor force did so to wage and salary work, although about one in five was self-employed. The multivariate analysis provides insight into the factors that affect these transitions and contributes to our understanding of the three issues highlighted above.

#### There are 170 million workers in the US.

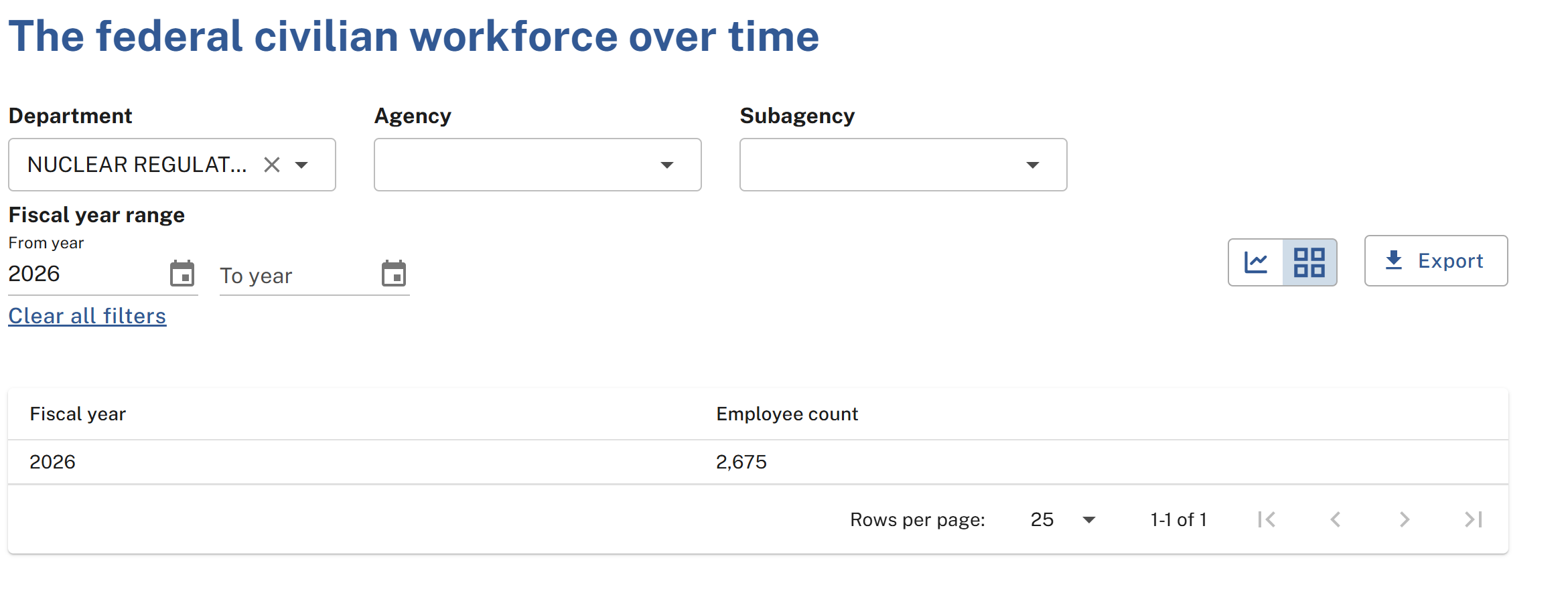
Statista 25, Statista Research Department, “U.S. civilian labor force seasonally adjusted 2023-2025”, Nexis Uni

In August 2025, the civilian labor force amounted to 170.78 million people in the United States. The term civilian labor force is used by the U.S. Bureau of Labor Statistics (BLS) to describe the subset of Americans who have jobs or are seeking a job, are at least 16 years old, are not serving in the military, and are not institutionalized.

#### Violation---the plan only covers

#### 2,675 workers. 0.001%.

OPM 26, US Office of Personnel Management, Federal Workforce Data, “The federal civilian workforce over time,” https://data.opm.gov/explore-data/analytics/workforce-size-and-composition



#### Vote NEG for limits---hundreds of tiny “give CBR to 20 people” AFFs sidestep clash and destroy NEG research burden, making debate impossible.

### 1NC

Capitalism K

#### Capitalism is unsustainable AND culminates in a convergence of existential risks.

Dr. Jürgen Scheffran 25, PhD, Professor, Integrative Geography, University of Hamburg. Chair, Research Group Climate Change & Security (CLISEC), Institute of Geography, "Planetary Boundaries, Polycrisis & Politics in the Anthropocene: Climate Pathways, Tipping Cascades & Transition to Sustainable Peace in Integrative Geography," in Towards Rethinking Politics, Policy & Polity in the Anthropocene, Chapter 8, pg. 339-444, 02/25/2025, Springer. [italics in original]

Since the agricultural and industrial revolutions, humanity has increasingly shaped the face of the Earth. Crutzen/Stoermer (2000) coined the term ‘Anthropocene’ for the current human-made geological age following the Holocene, leading to a permanent change of the geological record resulting from actions of human beings (Brauch 2021b; Balbo et al. 2020). This adds a temporal dimension to the spatial dimension of ‘Anthroposphere’, i.e. the geographical space where the Earth’s resources are used for the service to humanity while associated consequences, crises and conflicts of this endeavour have long played only a minor role. With the Great Acceleration (McNeill/Engelke 2016) of human development reaching limits to growth and planetary boundaries they turn into disruptive forces that can undermine the existential living conditions of humanity, as we are currently experiencing in the multicrises world, challenging the current Western-dominated world order which started with colonial expansion from Europe and the industrial revolution in Great Britain creating a global empire (Scheffran 2023b).

As the world wages ever new defensive battles against crises and disasters, from climate change to the Corona crisis, what room for manoeuvre remains to avoid or manage future crises? A broad spectrum of possible futures is conceivable, ranging from a collapse of human civilization to a profound transformation of the economy and society and a reshaping of human-nature relationships. As an alternative, humanity can enforce a transformation to sustainable development which is an attempt to steer expansive human development into orderly and stabilising channels. The available environmental space is to be used in a planned and sensible way and at the same time an acceptable life is to be guaranteed for all inhabitants in the common house of the earth in the long run. In addition to an efficient and fair use and distribution of resources, it is also a matter of adapting human needs to the available possibilities and of reorganising human coexistence in harmony with nature.

To address the challenges a key question here is whether the transition into a new world order can be achieved mainly by technical innovations and adjustments within the existing capitalist economic system and the liberal political world order, or whether it requires a fundamental system change in the underlying mechanisms of fossil capitalism towards a new socio-economic and political world order? Which pathway is still possible depends on whether humanity has already reached or passed critical thresholds beyond which destabilising tendencies undermine or disrupt the conditions of human existence. Can we expect more negative effects at the friction points of natural and societal dynamics, such as environmental degradation and waste pollution, disease and death, hunger and poverty, violence and conflict? Or will humanity find new pathways out of the vicious circles of problems and crises towards virtuous circles of solutions and synergies for resilience, sustainable development and peace? While these questions are in different ways facing normative challenges for policies, politics and polities, finding innovative solutions requires integrative and preventive governance approaches beyond crisis management.

It would be counterproductive if crisis management and associated conflicts continue to undermine the foundations for sustainable problem-solving in the context of a socio-ecological transformation, a neglected issue since three decades. The implementation of the *Sustainable Development Goals* (SDGs) can generates synergies but also trade-offs, on the one hand due to conflicting goals, and on the other hand due to tensions between the actors involved. Each policy measure has not only the intended outcomes but also side-effects and consequences, which may appear as positive or negative from different perspectives. This indicates the growing ambivalence of our increasingly complex world where nothing seems to be certain anymore (Scheffran 2018a; Dörre 2022). This raises the question how tensions between different policy fields can be reduced or constructively managed, in particular by making a social-ecological transformation and a conflict transformation compatible and mutually enhancing.

Addressing ambivalence and complexity of multiple crises needs novel contributions by interdisciplinary research and transdisciplinary science, in particular geographical science which traditionally studies human-nature interactions through physical and human geography. Increasingly the field of ‘integrative geography’ is emerging which explores the spatial and temporal interactions between the natural environment and human society. Terms like space and landscape, limit and boundary, connection and pathway, transition and transformation, Anthroposphere and Anthropocene are key concepts of an integrative geography that have in common that they investigate the main objects, subjects, systems, terms and statement as well as pathways, linkages and interactions between them. Going further is to study what happens in the ‘interspace’ between two different terms, which both connects and separates them, and thus is framed by both terms. Such connecting conceptions will serve as an overarching umbrella in the following, including human-nature relationships and scientific ambivalence, geographical concepts and debates on limits to growth, the origins of political economy, the Club of Rome’s limits to growth and planetary boundaries. Current risks, crises and geopolitical challenges focus on interactions between climate change and conflict, including issues of biodiversity loss, ecocides and environmental migration. Integrative concepts and options in related interspaces provide opportunities for selecting appropriate policies, political governance measures and institutional polities to avoid negative tipping points and utilise positive tipping mechanisms for climate policy, cooperative governance, conflict transformation and sustainable peace.1

8.2 Conceptions of Human-Nature Relationships

The relationship between natural systems and human societies is affected by various experiences, perceptions, understandings, attitudes, practices and interactions which are represented by the following conceptions of nature (Scheffran 2000b).

*8.2.1 Nature as a Habitat of Human Evolution, Experience and Knowledge*

In the history of philosophy, the idea of a given nature is connected with the idea of an origin not influenced by humans. Human evolution emerged from and adapted to natural conditions, within the constraints and opportunities of natural laws, physical space and time, and the availability of natural resources. Like for other biological organisms, the human body is endowed with natural abilities such as sensory organs to feel, hear and observe the environment, hand and feet to physically interact with it, as well as a brain to connect perceptions, experiences and recognitions. Knowledge, rules and relationships drawn from this interaction form an internal model about the world and its intersection with the body, guiding human behaviour and communication with the natural and social environment expressed in an adequate language. States and changes in the environment are classified and evaluated positively or negatively, as desirable and undesirable, if not ignored as irrelevant to reduce complexity. The environment contributes natural resources vital for human life, survival and basic needs like material substances, water, energy and information gathered and extracted from nature, including ecosystems with their plants and animals. In contrast, other conditions in nature are evaluated as dangerous, from certain wild plants and animals to natural disasters, poisonous substances and lack of essential resources.

*8.2.2 Nature as an Object of Human Construction, Action and Exploitation*

The embedding of humans into nature and its resources provides possibilities for actions to change the environment and construct it according to human imagination and capabilities based on science and technology, to better meet human desires and purposes. Increasingly the world is created by human actions, where needs and desires are based on social conditions and human livelihoods, economic production and consumption as well as human waste and pollution degrading the natural environment. With more successful learning and practices in human-nature interaction, opportunities grow for systematic influence and purposeful intervention to use natural processes enshrined in scientific knowledge, technical tools and experiencebased innovations to control, appropriate and render natural forces and services in order to enhance desired effects and reduce harmful ones. New capabilities improve the conditions of existence and find action pathways with a more effective and efficient relationship connecting ends and means, allowing for expansion even against resistance (Schäfer 1995).

Descartes imagined nature as a deterministic mechanical system contrary to the free will of human subject, and Kant distinguished nature from the freedom of human beings, following theoretical and practical reasoning. Exploring nature as an object of measurable experience, the experimental natural sciences systematically developed instruments for technical-industrial production (Francis Bacon) to increase health, wealth and material well-being. Science and technology designed a machinery exploiting natural resources to convert them into economic capital, political power, military force and social domination, driving economic production and consumption to maximise utility. Human interactions with the natural environment impose a wide range of physical experiences and sensory impressions on human bodies, feeding the human brain with an internal representation of how ‘nature works’. Mental representations of nature as if-then relationships replicate what is possible, serving as a basis for human behaviour.

*8.2.3 Nature in Need of Conservation and Its Sustainable Use*

Contrary to the idea of unlimited scientific progress and technical omnipotence, natural resources and environmental boundaries constrain human expansion, living space and ecological footprint on earth. Taking resource consumption, physiological metabolism and ecosystem functions into account, human-nature relationship has transformed over time. Nature is no longer regarded merely as an object of exploration and an unlimited reservoir for resources and waste. Once considered inexhaustible and self-reproducing without limits, it is now experienced as vulnerable, as a precious commodity that must be preserved through guardrails. The biosphere is seen as a living network and a community of organisms, including *Homo Sapiens*, whose interventions must be considered in terms of their consequences. Depending on nature, human societies, infrastructures and lifecycles are also vulnerable and need to be sustainably embedded in the natural cycles (Johnke et al. 2004).

*8.2.4 Co-evolution in Human-Nature Interaction*

Human and natural spheres are separated by boundaries and interconnected through multiple pathways of exchange. Human-nature interactions range from natural constraints of human action to human control over the natural environment and its resources needed for human life and evolution. One challenge is to handle the complexity of this interaction and find a sustainable balance between natural and human systems. While assessments of human-nature interaction differ between disciplinary natural science and social science perspectives, the focus is here on interdisciplinary approaches exploring the middle-ground between disciplines. As humans are also grown up in a social environment, they can learn from others through observation, education and narratives to adapt and follow beliefs and rules guiding human action, in particular towards the natural environment. Human perceptions, imaginations and desires as well as future expectations and assessments of consequences are driving the process of human creation, innovation and intervention.

Human ability to work, extended and multiplied by technology expanding the action space of the human body, continuously shapes human-nature relationships. Individual and collective actions transform physical spaces, from envisioned to constructed landscapes that meet human needs and frame natural landscapes as ‘nature by design’ which however is an Oxymoron as nature disappears in the process of construction and becomes a cultural artifact. Apparently neither a natural nor a social science perspective alone can explain the complexity of human-nature interaction. Reductionist approaches, such as geo-determinism or human framings of nature, cannot explain the complex dynamics of one system mutually affecting the other. The challenge is to develop co-evolutionary conceptions of mutual and reciprocal transformations between both systems towards a sustainable balance of nature and society, taking into consideration the different time scales as social evolution usually can occur more rapidly than natural evolution. This calls for an integrative science of human-nature interactions to understand the stabilizing and destabilizing conditions of this relationship.

*8.2.5 Mixed Methods in Human-Nature Interactions*

To investigate complex human-nature interactions, mixed methods offer a toolbox of integrative approaches. Systems theory and complexity science analyse nonlinear dynamics, complex adaptive and self-organising systems, game theory, agent-based modelling and social network analysis to study complex social interactions (Scheffran 2006). Regarding the presentation and analysis of data widely used are remote sensing and geographic information systems (GIS). Integrative research methods such as interviews und focus groups, qualitative, participatory and agentbased modelling provide insights about stakeholder perceptions, assessments, actions and interactions (Bendor/Scheffran 2019). With mixed methods it is possible to frame geographic conceptions such as landscapes, interfaces, borders and diffusion processes from a natural and social science perspective. Models and simulations can help to understand how individual components become an integrated whole through self-organisation and synergies, although they represent only projections and not the full complexity of human-nature interactions (Scheffran 2016). The question is whether discrepancies, simplifications and uncertainties between the model and real world can lead to misleading projections about the future.

8.3 The Framework of Integrative Geography

*8.3.1 What Is Integrative Geography?*

Integrative geography is not a new discipline but an integrative approach within the discipline of geography which is inherently interdisciplinary through building bridges between physical and human geography and connections to other disciplines, such as energy geography, water geography, climate geography, economic geography, political geography, social geography, historical geography, to mention a few. This offers the opportunity to connect to other disciplines and research fields and merge knowledge to jointly address key challenges, raising the question what the core of geography is. In a widely held understanding geography is about the spatial dimensions of the world in general and science in particular, as indicated by terms like space, place, location, distance, contagion, etc. While integrative geography is not consistently defined,2 it can be further developed. Many key terms and challenges in an ever complex world can be explained and embedded within an open framing of ‘Integrative Geography’.

While some argue that geography is per se integrated, going back to the integrated perspectives of Alexander von Humboldt, others complain about a divide within geography between the natural science approaches of physical geography and the social science perspectives in human geography, which can be seen from the fact that geography belongs to different faculties at universities. Over the past decade integrative geography has been not so much a unifying concept but was occasionally considered as an opportunity respecting the diversity within geography and with other disciplines. While large multi-volume encyclopaedias have no entry on integrative geography (besides few mentions in the text), at least the term has found its way into *Wikipedia*, where it is also called integrated geography, environmental geography, human–environment geography (Rupke 2008). It is described as a third branch of geography “where the branches of human geography and physical geography overlap to describe and explain the spatial aspects of interactions between human individuals or societies and their natural environment” (Castree 2009; Garcia 2010; Moseley et al. 2014).

Integrative geography plays a role in exploring the interactions in coupled human– environment systems that form complex spatial structures in geographical landscapes by the flows of energy, matter and information and analysing human communications, interventions and feedbacks within and between these spaces. A common attribute of integrative geography is that it often studies intermediate phenomena, as well as transitions and transformations, between established concepts, such as physical and human geography, natural environment and human society, spatial and temporal processes, environment and conflict, conflict and cooperation, war and peace, environmental destruction and sustainable development, Anthroposphere and Anthropocene. This implies that not only these concepts and their specific aspects matter, but also the intermediate zone between them which separates and connects them. In a geographic terminology it can be called ‘interspace’ (in German *Zwischenraum*) which is the space or transition zone between structures, whether they are physical, biological, economic, social, political or explicitly geographical. Studying the dividing and interconnecting zones between these structures explicitly allows understanding the processes driving and blocking exchange and transition between them, including the discourses and dialogues of communication.

The concept of interspace may also draw upon and potentially enrich the philosophical foundations of logic. Philosophy has for a long time focused on dyads, pairwise relations between opposing terms, such as true-false, subject-object, largesmall, finite-infinite, dry-humid, we-they, centre-periphery, or Ying–Yang. There have been many attempts to go beyond binary logic, from dialectic logic (thesis – anti-thesis – synthesis) to overcome contradictions and develop synergies between two opposing pairs, to fuzzy logic bridging the 0–1 dichotomy with a spectrum of numbers in between.

A new way of trialectical thinking was proposed by Henri Lefebvre (1981), assuming that there is something between two terms that is relevant. After his death in 1991, this concept was further developed and applied to space by Edward Soja (1996: 70) who argues that “the third term never stands alone, totally separate from its precedents or given absolute precedence on its own.” Moving from binary to dialectic and trialectic thinking, it might be worthwhile to also consider ‘interlectic’ thinking to explore the interspace between multiple things and thus better understand the complexity of their relationships, which is becoming common in the ‘nexus’ approach studying interactions between multiple phenomena such as climate-conflict-migration or water-energy-food. This might also allow to consider the pathways and transitions between systems characterised by qualitative change in their attributes. Drawing on this philosophical embedding, conceptions of integrative geography are discussed in the following.

*8.3.2 Space, Time and Landscapes*

Cutting short the extensive literature on space in philosophy and science, space is considered here as a multi-dimensional frame where different things are located and moving across distances, changing their relative positions to each other at varying places. Changing relations in space occur as sequences in time, thus leading to shifting relational constellations of closeness and distance, location and place, spatiality and temporality. Within and against this framing different conceptions of space are highlighted: three-dimensional physical space in Newtonian mechanics based on a fixed grid of coordinates without relation to anything external; absolute space and time as an *a priori* form (Kant); relative space of location of things and network of places where motion is ascribed to a body (Leibniz); four-dimensional space-time continuum (Einstein); terrain where moving takes effort against friction and resistance, finding locations, places and pathways through mapping and navigation (geography); hot spots of climate and ecological change (environment); land allocated to property and ownership, production and consumption (economics); landscapes of colonialism, slavery and globalisation (history); territory for power projections and conflict at regional, national and international levels (politics); imaginary and behavioural spaces (psychology, sociology) (Thrift 2017).

Lefebvre (1991) describes space as a social product while overlapping social processes produce space in which the production of commodities and accumulation of capital takes place (Lukasz 2011). Lefebvre distinguishes three types of spaces within the trialectics of spatiality: objective space of spatial practices and actions in the real world; conceived representations of space formed in mind and not bounded by objective space; and lived space of representations resulting from objective and conceived spaces combined (imagination meets reality). Soja (1996) addresses how humans understand space, as material/physical or represented/imagined, and introduces the concept of “third space” corresponding to Lefebvre’s “lived space” to account for the complex ways in which humans inhabit, experience and understand the world where the spatial dimension plays a role. This is also the case in many other conceptions of space in the capitalist world, for instance highlighting that changes in the modes of production and consumption of capital interact with developments in transportation and technology, affecting the perception and compression of time, space and distance (Harvey 1990).

A related concept is ‘landscape’ representing geographic spaces shaped and grown over long historic times by interactions of natural and human forces, processes and practices acting upon earth. Landscapes are a living synthesis of people and place, land and landforms. These include physical elements like mountains, hills, water bodies such as rivers, lakes, ponds and the sea, living elements of vegetation, human patterns including different forms of land use, buildings, and structures, and transitory elements such as light and weather conditions.

*8.3.3 Interspaces, Boundaries and Pathways*

Geographic spaces and landscapes are characterised by structuring features and patterns, separated by interspaces which include and exclude, connect and disconnect, integrate and divide, separate and join human and natural spheres. The German term ‘Grenze’ represents a wide range of related terms in English language, each with specific meanings in different contexts: border, barrier, bound/boundary, front/ frontier, limit, contact, division, edge, interface, periphery/perimeter, guardrail, restriction, constraint, demarcation, confinement, threshold. Some of these terms are more exclusive (divisive), others more inclusive (connecting) (for selected definitions see Table 8.1).

Geographical boundaries and borders divide geographical spaces into historically grown units (such as nations) along which interactions, transformed by physical and anthropogenic drivers that determine the spatial forms and patterns. All systems have limits in which they operate and are viable. Value limits are defined by what is desirable and acceptable. Action limits are given by feasibility and capability in reaching targets or by inacceptable risk associated with pursuing certain actions. Steering a system needs to respect boundaries of stability and viability beyond which tipping to qualitatively different state can occur. There are static and dynamic interspaces which is a matter of degree. For instance a mountain may appear as static although it has been (trans-)formed over geologic times of millions of years (sometimes with rapid eruptions), while rivers and ocean coasts are more fluid and can change their form on a daily basis.

[Table omitted]

Complementary to boundaries are pathways which are routes and channels that allow to connect, move into selected directions, enable and govern metabolic or other regulatory processes downstream, through exchange of energy, matter and information along or across contact surfaces. Boundaries can block pathways and slow down expansion due to resistance, cost or risk (e.g. when limits to growth are reached), which in turn can induce actions to overcome boundaries or find new pathways through innovations. Which one succeeds depends on the forces, capabilities and powers applied by the systems in the respective interaction to overcome the boundary as well as the resistance to ‘defend’ it. Ultimately changing a boundary is a question which force, power or capital dominates and the efficiency of their use. A few examples are highlighted here, where the concept of geographical interspace is relevant across disciplines:

1. Rivers may separate countries but also connect different geographical, cultural and political regions which can lead to interdependencies favouring conflict or cooperation. As an example, the Nile river connects the tropical areas of Central Africa with the arid zones of North Africa. The water courses of the Himalaya glaciers are a source of water for vast areas of South Asia, East Asia and Central Asia and connect high mountains with coastal regions.
2. Coasts connect and separate land and sea, thus are being formed by dynamical processes and features of both elements. This is relevant for coastal communities which have adapted to the specific livelihood conditions along and across land-sea interfaces, including weather, climate, food, labour, transportation and culture.
3. The atmosphere is the interspace between Earth’s surface and outer space along a gradient of temperature, pressure, humidity and other variables important for weather and climate patterns. Its composition and dynamics are driven by physical exchange processes and anthropogenic activities using this medium for life support, transportation and deposition of polluting substances that affect local and global climate which in turn affect earth system dynamics and living conditions for all organisms specific to different climatic zones.
4. Peri-urban spaces have features of both rural and urban areas, separating and connecting them, e.g. through movement of people, resources, goods and information.
5. Multiple levels from micro to macro levels are connected through the meso level in between; similarly, local and global levels interact with the national level.
6. Migration is a change in place over an extended period and across borders, driven by motivation and capability along migratory pathways which are the interspaces between origin and destination.
7. Conflict and cooperation are connected through decision-making and negotiation processes, selecting pathways of action according to individual or collective motivations and capabilities. Between conflict and cooperation mixed cases are possible, e.g. cooperation in conflict or conflict resolution in cooperative situations.
8. In the climate-conflict-migration nexus multiple pathways of interactions are possible, depending on intensity of change in key variables and their sensitivity to change, leading to escalation for risk multipliers or de-escalation through synergies.
9. The nexus of water, food and energy can aggravate a mutual decline when losses of one resource trigger declines of others or do the opposite through win-win synergies.
10. The ambivalence of science and the dual-use of technology demonstrate that often there are no clear dividing lines between positive and negative applications while mixed cases make social control of the consequences difficult.
11. Connecting spatial and temporal dimensions, the continued expansion of the Anthroposphere transforms the Earth system into the Anthropocene, running into conflict with planetary boundaries which manifest as limits to growth.
12. National borders allow for the inclusion of the ‘own’ by exclusion of the ‘other’, used to justify claims of influence. Western expansion before and after the Cold War has triggered opposition and resistance, contributing to geopolitical conflict.
13. Increasing human footprints put pressure on the interspace with the biosphere, leading to losses in ecosystems and biodiversity and related diseases and pandemics like Covid-19.
14. Destabilizing system changes include collapse of ecological and social systems, as well as transition and transformation processes towards sustainability, conflict resolution and sustainable peacebuilding, driven by complex mechanisms of compounding risk, tipping points and cascading domino effects.
15. In large spatial and temporal perspectives relevant is the position of planet Earth within the space environment, in particular the manifold interactions between global interspace and outer space, with spaceflight connecting both and the potential exploitation of resources in space.
16. More broadly, the concept of interspace allows to study various phenomena where the term ‘inter’ plays a role, such as international, interdisciplinary, intercommunal etc.

Some of these examples and their implications will be discussed in the following within the framework of integrative geography, in particular those relevant to political dimensions. Starting from historical debates on colonial expansion and the beginning of the Industrial Revolution, the following section will highlight limits and crises between nature and society leading to tensions as well as cooperation, with a view on Anthropocene boundaries, environmental conflicts, and conditions for a cooperative transition to sustainable development, linking natural science system levels and social science actor levels in an interdisciplinary way.

8.4 Limits to Human Expansion in the Anthropocene

*8.4.1 Colonial Expansion and the Division of the World*

The colonial expansion from Europe has been an inseparable part of the Western success story which became a driver of human growth in the Anthropocene. Following Columbus the ‘New World’ was conquered through armed forces, technological advances and Christian missionaries. Around the world, millions of people and huge amounts of resources were subjugated to European exploitation (Reinhard 2016). The oppressed were often exposed to terrible atrocities, their labour and resources exploited. A chain of genocides exterminated millions of indigenous peoples and their natural living conditions, by violent force, diseases, invasive species (Zimmerer 2020), facilitating European expansion on a largely depopulated continent. Slavery brought more than twelve million people from Africa alone to America to tap the wealth of the colonies.

The colonisation and exploitation of other continents contributed significantly to the development of Europe. By appropriating foreign wealth, the colonial powers were able to mobilise enormous resources (from gold to crops) and achieve comparative advantages that continue to have an impact until today. From colonial profits, European powers were able to create economic surplus and foster industrialisation, feed a growing population and finance wars that partially absorbed the surplus and reduced population (only to mention the vast population losses by the Thirty Years War; Menzel 2015). Poverty, hunger, persecution, and war in Europe pushed millions of people in several waves of emigration to leave the overcrowded old continent, externalising the failed politics of European powers (Scheffran 2021).

With the Industrial Revolution and the use of domestic coal, Great Britain was able to extend its lead and establish a world empire. Its dominant role was partly taken over by the USA as a hegemonic power in the 20th century. Germany found itself disadvantaged in the acquisition of colonies and tried in vain to shift the power game to its favour in both World Wars. Following the Russian colonial expansion since Tsar Peter the Great over vast parts of the Eurasian continent, with the October Revolution of 1917 these territories were integrated into the Soviet Union, providing a powerful counterweight to the West. After World War II, the United States was able to expand its power in the East-West conflict and the ideological battle between capitalism and communism which led to the nuclear arms race and near extinction of humanity through nuclear war. Even after that, violence remained a means of politics for former colonial powers, preserving neo-colonial structures until today (Scheffran 2021).

These support the prosperity of the rich countries at the expense of poorer regions, which are suffering from deprivation, debt, resource exploitation, low-wages, precarious living conditions, climate change and environmental degradation. They are caught in a poverty spiral of low income and productivity. This shapes perceptions in the Global South today, as does the collective memory of colonial times. Although the countries there never had the development opportunities of the colonial powers and were victims of foreign invasions, they were blamed for their weaknesses (hunger, poverty, conflicts, lack of democracy, corrupt elites, low efficiency, etc.). This explains the differences between North and South but does not justify failed politics by regimes in the Global South. Starting from colonialism and driven by the growth dynamics of the industrial revolution, the Western development model, with its accumulation of growth, power and violence, has unfolded an unprecedented expansion encompassing a globe that is full and reaching limits to its further expansion. Going beyond general conceptions of the Anthropocene, some actors and governments are more responsible for the deterioration of the Earth than others.

*8.4.2 Roots of the Growth Debate: Smith, Malthus, Marx*

We can learn from roots of the debate about the limits to growth dating back to the 18th century, when the Industrial Revolution began in England, fuelled by the exploitation of cheap coal resources driving long-distance transportation and mechanised mass production which secured England an enormous lead over other European countries. Until then, besides little wind and hydropower, energy supply was based primarily on biomass, which reached limits due to heavy deforestation and agricultural land constraints for a growing population. While there were about one billion people on the planet at the turn to the 19th century, exponential population and economic growth became apparent to political economists who thought about the consequences.

At first possible natural limits only played a marginal role in emerging capitalism. Adam Smith (1723–1790) assumed that resource scarcity would be regulated by markets and trades. In his famous treatise *The Wealth of Nations* he assumed that non-renewable raw materials could be exploited without being limited by geographic location or the yield of the own mines due to international transport possibilities (Smith 1905 [1776]: 325f.): “The quantity of the precious metals which is to be found in any country, is not limited by anything in its local situation, such as the fertility or barrenness of its own mines.” Preempting globalisation, he assumed “the easy and cheap transportation of those metals, of their small bulk and great value.” In contrast, Smith recognised the scarcity of renewable resources such as fish when fishery increased which revealed insights about the relationship between nature and economics relevant until today. While fish production is uncertain and limited by geographic conditions and the fertility of the fish population, demand and price in the fish markets grow with human population and economic production: “The fish must generally be sought for at a greater distance, larger vessels must be employed, and more expensive machinery of every kind made use of.” Thus, as scarcity increases, it becomes more difficult to meet the demand, requiring more effort (labour) and increasing fishing costs (cf. *ibid*.), although technical tools can increase catch efficiency. The process continues until further resource output is no longer worth the input and additional efforts cannot be justified when the resource base is severely destroyed, requiring a transition of a new one.

Smith also grappled with the biological and economic bases of population growth. He believed that the scarcity of food would place barriers to further human increase, while abundant rewards for labour would provide for more children and expand the barriers: “The demand for men, like that for any other commodity, necessarily regulates the production of men, quickens it when it goes on too slowly, and stops it when it advances too fast” (Smith 1776: 111). Thus, the increase of a population would be naturally proportionate to the means of its subsistence.

The relationship between population and resources was further pursued by Thomas Robert Malthus (1766–1834), British pastor and political economist. In his work *An Essay on the Principle of Population* (Malthus 1798), he expected population growth to exceed resource availability in the foreseeable future. He postulated that the human population would increase in exponential steps (geometrically) (1, 2, 4, 8, 16 …), while food production would increase only linearly (arithmetically) (1, 2, 3, 4, 5 …). The result is a disproportion between the number of people and the amount of food, and “unless an emigration takes place, the deaths will shortly exceed the births”, leading to a deterioration of living conditions of the poorer masses:

The vices of mankind are active and able ministers of depopulation. They are the precursors in the great army of destruction; and often finish the dreadful work themselves. But should they fail in this war of extermination, sickly seasons, epidemics, pestilence, and plague, advance in terrific array, and sweep off their thousands and ten thousands. Should success be still incomplete, gigantic inevitable famine stalks in the rear, and with one mighty blow levels the population with the food of the world.” (Malthus 1798: Ch. VII, p. 61 [1])

Facing these challenges, Malthus assumed that all social utopias ultimately must fail because of the insurmountable law of population. Even if the wealth of a nation increased, this would not benefit the masses, who lived in poverty despite hard work and struggled daily to survive. In his religious assumptions, he rejected contraception and abortion and advocated abstinence and continence. The plight of the working class could not be improved in the long run by poor government laws because the amount of food was limited and led to competition. Prosperity for all would allow the population to grow until hardship put an end to the ideal state. Accordingly, Malthus was critical not only of Adam Smith’s promise of wealth, but also of England’s intellectuals influenced by Enlightenment, whom he saw as threatening England’s social order. In turn they rejected his assumptions and accused him of pessimism or lack of science, while some of the classical economists (such as David Ricardo or John Stuart Mill) largely agreed with Malthus’s population law.

Charles Darwin also referred to Malthus’ struggle for existence in his theory of evolution of natural selection. Intertwining social and natural science theories (see Remoff 2016), Darwin recognised the potential of geometric (exponential) growth for all organisms and noted that growing populations colonise new spaces where the best adapted survive, which opened up the possibility of satisfying humanity’s growing demand for resources compatible with the living world, an early account of the concept of sustainability.

Much of the work of Karl Marx (1818–1883) was critical of Malthus. He considered him an apologist for capitalism and condemned the theory of overpopulation as reactionary, since it justified the misery of the working class and the ethics of abstinence primarily affected the poorest. What mattered for Marx was not the number of people, but the productive forces and the socio-economic conditions of the working class, which could very well be improved. In *Theories of Surplus Value*, Marx, however, conceded: “As compared to the wretched bourgeois economists who preach harmony, Malthus’s only merit lies in his pointed emphasis on the disharmonies” (Marx 1919: 110). In his critique of Malthus, Marx also referred to James Anderson of Hermiston (1739–1808), who questioned the population theory and said explicitly that the land is capable of increasing and perennial improvement, because he assumed that the “soil can be continuously improved by chemical influences and cultivation” and “under a judicious system of management, that productiveness may be made to augment, from year to year, for a succession of time to which no limits can be assigned” (Anderson 1801: 35–36). Moreover, Marx referred to Darwin’s ‘geometrical’ growth of life, which opened up the possibility of organically satisfying humanity’s growing resource needs. Friedrich Engels, however, countered a supposed boundlessness with a warning in his *Dialectics of Nature*:

Let us not flatter ourselves too much with our human victories over nature. For every such victory she takes her revenge on us. […] Thus at every step we are reminded that we by no means rule over nature like a conqueror over a foreign people, like someone standing outside nature—but that we, with flesh, blood and brain, belong to nature, and exist in its midst, and that all our mastery of it consists in the fact that we have the advantage over all other creatures of being able to learn its laws and apply them correctly […]. (Engels 1975 [1876]: 452)

*8.4.3 The Club of Rome and the Limits to Growth*

The relationship between population and resources remained contested until today. Despite an eightfold increase in the world’s population since 1800, food production has largely been able to keep pace. Not foreseeable to Malthus were the increased production capacities of industrialised agriculture as a result of artificial fertilizers, seed breeding and machinery in the wake of the ‘Green Revolution’. Contrary to his thesis, with growing prosperity in the industrialised countries, the birth rate declined as a result of the Demographic Transition. Thus, the limits to growth were pushed further and further into the future. Environmental problems were more a matter of national resource availability and access, making scarcity a driver of trade and conflict. Despite the actual improvements expected by Anderson and Marx, also disasters and disharmonies took place, such as famines, epidemics and major wars such as the two world wars, associated with violent struggles over natural resources such as land, coal and oil which cost the lives of millions of people. However, these events were not able to decisively reduce global population growth as expected by Malthus.

Malthus’ theses continue to polarise until today, reflected in heated debates (Ide/ Scheffran 2012). While some neo-Malthusians agree with his ideas, others find his political conclusions hard to accept such as the abstinence of the poor (e.g. Magnus 2009). Fundamentalist ecology, which saw overpopulation as an enemy of nature, or development policies aimed at population limitation, are criticised by leftists as fighting the poor more than poverty.

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 disarmed3, 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 nonrenewable 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).

*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 whistleblowers 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 humannature 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 complexity4 (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 microlevel 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 selforganisation 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.

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).

A diagram of a network

AI-generated content may be incorrect.

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 systeminternal 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).

*8.5.4 Managing Complexity and Simplicity*

Growing complexity provokes opposing trends of over-simplification, populism, nationalism, religious fundamentalism, illiberalism, anti-globalisation and antiscience 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 humannature 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).

[Figure omitted]

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,5 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.

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. Militarisation 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).6 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).

#### The plan sanctions the extension of wage labor that legally and ideologically sustains capital. The alternative is worker control of the government, refusing collective bargaining to propogate alternative economic regimes.

Mark Barenberg 22, JD, MSc, Professor, Law, Columbia University. Director, Labor Law & Political Economy, Columbia University, "A New Labor Law for Deep Democracy: From Social Democracy to Democratic Socialism," in The Cambridge Handbook of Labor & Democracy, Chapter 1, 2022, pg. 13-35. [italics in original]

If our goal is to construct workplace relations that maximally empower workers and best sustain ideal forms of industrial democracy and worker-centered political democracy, how should we remake labor law? This chapter argues that the academic field of labor law, if it is to further that goal, must expand far beyond its conventional scope of studying the law of collective bargaining, the employment contract, and workplace standards.1 And, correlatively, the political work of legal-institutional reconstruction must reach beyond the domain of the legal rules and institutions that directly shape unionization, contracting, and employment standard-setting into other legal-institutional domains not presently constructed with the goal of worker empowerment and democratic deepening in mind. The chapter applies this “new labor law” to two types of regimes: first, the US variant of social democracy – that is, the current incarnation of the New Deal regime that promotes unionization within a capitalist economic system; and second, a democratic socialist regime for a post-capitalist economy centered on fully worker-controlled enterprises.

The argument of this chapter proceeds in four sections. The first sets out the basic problem of sustaining industrial and political democracy in a capitalist economy. In order to flesh out that problem, the second offers a conceptualization of capitalist *political and economic* institutions – and of the disempowerment of workers in both the workplace and politics – that is more multifaceted than New Deal labor law’s sole focus on the institution of wage labor. The second then argues that mapping the essential *legal* infrastructure of this panoply of capitalist institutions has been undervalued by leftist labor lawyers and political economists. The purpose of expanding the scope of labor law as a field of legal *study* is, precisely, to examine how legal rules and institutions presently construct workplaces in ways that both promote and undermine worker power and democracy and how those rules and institutions could be reconstructed to better realize those values.

The third section therefore applies the new labor law to critique the current version of the New Deal labor policy and many other fields of law and to propose their renovation to support a deepened, worker-centered form of social democracy suited to post-mass-production finance capitalism. The fourth argues that, perhaps unexpectedly, many of the reforms that would strengthen worker power and democracy within contemporary capitalism would also be essential for realizing the same goal within post-capitalist democratic market socialism. That section, again applying the new labor law, then discusses some key additional legal questions that would need to be answered to construct and sustain the worker-controlled enterprises at the heart of the latter regime.

Within the scope of this chapter, all four sections of the argument must necessarily be highly compressed and schematic. The chapter maps in a skeletal and merely illustrative fashion some of the specific elements in just a few of the legal domains outside of conventional labor law that structure contemporary capitalism and that could structure an imagined democratic socialism. The chapter is therefore intended only as a prolegomenon to a more comprehensive treatment of the new labor law, as applied to varieties of both existing capitalism and alternative capitalist and post-capitalist possibilities.2 The goal here is to persuade the reader that expanding labor law’s scope will advance the project of conceiving legal reforms to strengthen worker power and democracy across a range of political economies.

Three prefatory notes, the first substantive, the second and third terminological: First, although this chapter points to certain possible reforms in existing law within capitalism and discusses general problems of legal design raised by democratic socialism, in both cases real reconstruction cannot and should not be specified in an analyst’s blueprint but, rather, would be shaped by participants in the political movements and struggles that might bring about the reconstructed institutions.

Second, when this chapter refers to the legal “construction” of political and economic institutions, that word is used in a special and expansive sense. It denotes that a law or legal institution strongly influences the political or economic institutions in question. The means of such influence may be either coercive legal sanctions or the law’s non-coercive ideological effects; may be implemented through legislative, judicial, or administrative rules, principles, and processes; and may be either a prohibition or permission of economic or political action. And, reference to legal construction of political and economic institutions does not mean that law and legal institutions are not reciprocally influenced by those institutions and by political and ideological contestation among social actors. This chapter assumes just the contrary: the legal infrastructure of particular political economies must be mapped and analyzed, in order to conceive both radical legal reform to strengthen worker power and democracy *and* the political action to achieve it.

Third, the term “strengthening worker power and democracy” should be read as a shorthand, denoting the individual and collective empowerment of workers in the workplace, and the deepening of industrial democracy and worker-centered political democracy.

THE INHERENT TENSION BETWEEN CAPITALISM AND DEMOCRACY

An unassailable proposition advanced by progressive and socialist theorists and actors at least since Karl Marx is that capitalist economies pose a systematic threat to both industrial and political democracy. In 1936, a year after enactment of the National Labor Relations Act (NLRA or Wagner Act), Franklin Roosevelt echoed Marx’s diagnosis: “Here in America we are waging a ... war for the survival of democracy” against the “economic royalists” whose “[n]ew kingdoms were built upon the concentration of control over materials things,” who “reached out for control of Government itself,” and who took “[t]he hours of men and women worked, the wages they received, [and] the conditions of their labor ... beyond the control of the people ...” (Roosevelt 1936).

To understand the tension between capitalism and democracy with enough specificity to criticize and reconstruct labor law, we must ask: what are the core institutions that define capitalism and that determine the degree of worker power and depth of democracy? In many standard Marxist accounts – far more simplified than Marx himself assayed – the defining institution of capitalism is wage labor (just as the defining institution of feudalism is serf labor, and the defining institution of a slavocracy is slave labor): to survive, property-less workers must sell their labor power to the property-owning class of capitalists, and the same necessity disempowers workers within workplace and political hierarchies dominated by the propertied class.

This account of worker disempowerment and domination is also at the center of the decidedly non-Marxist labor policy of the New Deal, which sought to reconstruct, rather than overthrow, capitalist work. Senator Wagner, the architect of that policy, often stated that it was a response to one fundamental injustice – the coercive denial of individual freedom and collective democracy – flowing from the wage-laborer’s need to enter employment to survive (Barenberg 1993: 1422–1427). And Section 1 of the NLRA states that legally protected unionization, in and of itself, creates “equality of bargaining power,” 3 with no regard to reconstructing legal institutions outside the Act’s narrow field of vision.

THE PANOPLY OF ECONOMIC AND POLITICAL INSTITUTIONS NECESSARY TO SUSTAIN WAGE-LABOR MARKETS AND WORKPLACE HIERARCHIES

The New Deal labor policy thus delimited the scope of the law necessary to solve the problem of worker disempowerment – and the coterminous scope of the conventional study of labor law ever since. That limited scope was not a creature of normative thought but rather of the ideology corresponding to a contingent truce line in the political struggles of the 1930s and 1940s. However, Marx’s work, and subsequent writing by Weber, Schumpeter, Keynes, and many other political economists, reveal a complex of additional political and economic institutions that sustain the institution of wage labor. The particular contours of these additional institutions empower or disempower workers, just as does the particular structure of wage labor itself.

What are these additional institutions? In order to realize profit, the capitalist enterprise must sell the goods or services made by the wage-laborer into the product market. This fact alone entails that mass wage labor requires the institution of a monetary system to enable the purchase of both labor power and products (think of the Marxist term “cash nexus” [Marx 1990]). The institutions of property, contract, and corporations4 are also essential to competition among private profit-taking employers, for obvious reasons (Polanyi 1944; Weber 2003 [1927]). And since continuous capital accumulation and investment are entailed by product-market competition among profit-taking owners, financial institutions and capital markets are also inherent features of capitalism (Schumpeter 1994 [1954]: 78). In addition, all contractual transactions require methods of communication; and the intrinsic capitalist drive to secure and expand markets – as individual capitalist enterprises compete for survival and enrichment – spawns the institutions of marketing and advertising, forms of communication more specific yet more culture-shaping than those required for generic contractual transacting. And the institutions of taxation and of state structures are essential to provide the monetary, financial, corporate, and other apparatus just described (Miliband 1973), as well as the legal system itself. Even further, as Max Weber argued, capitalism is fostered by an international order of multiple competing nation-states, as opposed to a single global state or empire: when independent states must compete for crossborder investment, capitalist private enterprises are, to a substantial degree, protected against comprehensive state discipline (Ingham 2008: 176) or state confiscation. Hence, the institutions of international trade, capital flows, and monetary transactions, and of national security are stanchions of domestic as well as global capitalist institutions, and therefore of capitalist wage labor and workplace hierarchies.

Needless to say, comprehensive mapping of the variety of capitalist economic and political institutions, historical and today’s, calls for vastly extended analysis, and the literature on the subject is rich and ranges across many disciplines. Institutions may look quite different but carry out similar functions in each of the “necessary” domains catalogued above (Hyman 2009: 17), and successful reconstruction of one capitalist institution may not require concurrent reconstruction of another (Unger 2009: 14). The new labor law’s proposals for institutional reconstruction must be responsive to the highly specific forms of capitalist production systems, enterprise organizations, markets, communication systems, political structures, and international orders that obtain, or might obtain, in various political economies.

Since all the (highly generalized) *economic* and *political* institutions just discussed are, for the reasons sketched, necessary simply to sustain the two (also highly generalized) institutions of central concern to labor lawyers – that is, wage-labor markets and workplace hierarchies – it follows that the *legal* underpinnings of *all* those economic and political institutions are as essential to the disempowerment and domination of workers as are the law of labor-management relations and working conditions within the workplace hierarchy, and the law of employment contracts, whether individual or collective. Hence, if we seek to answer the fundamental question that concerns many progressive and socialist labor lawyers – “What are the legal institutions that determine both worker power and labor’s capacity to deepen industrial and political democracy?” – we must look not only to the field of labor law as conventionally defined, as important as that law is to the question of worker power and democracy.5 We must look also to the laws of property, contract, money, corporations, communication, domestic and international capital markets, taxation, state administration, and so on. Whether these other legal fields are more or less important than conventionally defined labor law in answering the question just asked demands extensive empirical research.

Having said this, the new labor law will not bring together the *entirety* of each of the conventionally defined fields that in some way influence worker power and democracy. That would aggregate nearly all law. Rather, the new labor law will include and examine the particular elements or components of each conventionally defined legal field that most significantly reach – like tentacles – into the shaping of the relative power of workers and owners and into the determination of workers’ capacity to achieve industrial and political democracy.

APPLYING THE “NEW LABOR LAW” TO EMPOWER WORKERS AND DEEPEN DEMOCRACY IN THE CONTEMPORARY CAPITALIST ECONOMY

This section offers illustrations of several elements of multiple fields of law that construct worker power and democracy – including conventional labor law and domestic finance law and their interaction with constitutional law; the law of international trade, global capital markets, and national security; the law of the “social wage;” and various fields that comprise the law of consumption. The illustrations are drawn exclusively from contemporary United States law and political economy.

*Conventional Labor Law, and Its Interaction with Constitutional Law*

Although a key theme of this chapter is that conventional labor law studies only one field of law that constructs worker power and democracy, it is, needless to say, an important – and possibly the most important – field. This sub-section gives a synoptic picture of the conventional US labor laws and legal institutions most vital to that construction. The sub-section also gives illustrations of how those laws and institutions interact with constitutional law in ways that significantly construct worker power and democracy.

US law constructs great impediments to union organizing. By requiring majority-rule elections to achieve unionization, granting employers the right to run anti-union campaigns in the extended election campaign, and imposing minimal sanctions against employers that coerce workers during the campaign, the law constructs both the opportunity and incentive for employers to engage in such coercion. The startling rate of firings of union supporters in the run-up to the election – between one out of seven and one out of twenty, depending on the study – is an artifact of those legal components.

Union density is also diminished by the law’s construction of decentralized bargaining units6 and, at best, partial or “non-encompassing” unionization of the many employers across product markets or enterprise networks (Rogers 1990). Multi-employer bargaining is permitted only when a union is able to organize multiple individual employers and then win the voluntary consent of each to multi-employer units (Barenberg 2015). This legal construct is the critical foundation for the weakening of worker power via the conversion of vertically integrated enterprises to contractually interconnected supply chains and networks. What was once a permissible primary strike against all phases of production in the integrated corporation becomes an impermissible secondary strike against the very same multiple phases of production now lodged in multiple enterprises within separate bargaining units (Barenberg 2015). In other words, the most basic components of US labor law conspire with, and indeed accelerate, the disintegration of enterprises that is a hallmark of contemporary capitalism, by discouraging the enlargement of worker organizing in fluid, multi-employer bargaining units that match the equally fluid boundaries – in the political economy of post-mass-production finance capitalism – of production-and-distribution networks, geographic clusters, and sectors (Barenberg 1994: 881–884, 977–983; Barenberg 2015). (Recent proposals to mandate rigid sectoral bargaining in the USA do not take account of this fluidity in contemporary capitalism, although a sectoral scope may be the most desirable multi-employer unit in certain quarters of the economy – desirable, because most worker-empowering in context.)

Those basic legal components also construct the very geography of the US economy and society. The legal construction of decentralized and non-encompassing units greatly incentivizes individual employers not only to fight unionization to avoid competition with non-union employers in the same product market, but also to break or escape a union that has successfully organized the employer (Kochan et al. 1994). Other components of conventional labor law construct smooth escape routes for the employer. First, employers are not punished for closing a union facility and opening a non-union facility elsewhere, so long as the employer is not foolish enough to reveal anti-union emotion. Second, the law of successorship permits de-unionization by means of selling a going business, so long as the purchaser follows its lawyer’s advice not to recruit the majority of the new workforce from the old.7 Third, a 1947 Amendment of the NLRA authorizes state laws against compulsory dues payments, generating less unionized states and regions that attract capital from the more unionized.

These escape routes – and others constructed by bankruptcy law, corporate law, constitutional law, and the law of taxation and subsidies discussed below – may be just as important as the legal construction of coercive anti-union campaigns in diminishing union density in the USA (Kochan et al. 1994). The result: employers hopscotch from unionized to non-unionized regions, from urban areas to suburban or rural “industrial parks” where inter-union solidarity is relatively incapacitated, and from less to more racist regions to capitalize on racial divide-andconquer strategies against worker solidarity (Davis 2018).

These clusters of law – constructing non-union or anti-union regions (the Southern, Mountain, and Plains states) and areas (suburban and rural) – also indirectly weaken worker power and democracy by entrenching right-wing, anti-union blocs in the federal legislative process by reason of peculiarities of US constitutional law, including the electoral college method of electing the President, the constitutional authorization of states to draw congressional district lines, and the Supreme Court’s refusal to review state governments’ partisan “gerrymandering” of those districts.8 In a vicious cycle, constitutional law’s undemocratic empowerment of regions to which non-union capital has already moved enables federal policy-making that turns those non-union regions into even stronger magnets for the mobile capital that conventional labor law, in the ways just explained, permits and encourages (Hertel-Fernandez 2018). Without understanding this – and many other – interlocks of conventional labor law and constitutional law, the legal system’s full force in disempowering workers by encouraging capital mobility cannot be critically analyzed and leftists’ political energies cannot be well-directed.

The same goes for the US law of political spending. Conventional labor law permits political spending by unions, although yet another interaction of constitutional and conventional labor law now bars unions and employers from agreeing to require non-consenting bargaining-unit members to pay an increment of dues to fund that spending; each worker must consent to pay that increment.9 But, compared to revision of those rules, imaginable constitutional and legislative rules of political spending – beyond the scope of conventional labor law – could be just as or more important in building workers’ power to democratize a capitalist polity in the interest of working people, and to win substantive policies that would, reciprocally, strengthen unions and their political power, in a virtuous cycle.

The discussion above has focused on the law that constructs union organizing, capital’s escape from unions, differentiation among pro- and anti-union regions, and political spending – a network of law that interlaces strands of conventional labor law, constitutional law, and election law. Internal to conventional labor law, rules governing strikes, obviously, are also a key component in determining the relative degree of worker empowerment. Startlingly, US law permits employers to fire workers for all forms of slowdowns and work stoppages, other than full primary strikes and only when no contract is in effect. Even in the latter instance, employers may permanently replace strikers, who retain the right only to return to a job if a position reopens.

Finally, the exclusion of large swaths of workers from even the limited federal legal protections discussed above constructs worker disempowerment in two key ways. First, by excluding managers and supervisors from protections against employer retaliation, employers can effectively conscript those workers into participating in the employer’s anti-union-organizing campaign and strike-breaking efforts. That is, the employer starts a union election campaign with a large campaign organization in place, one that – unlike the union’s campaign organization – reaches every voter in the electorate for forty hours per week and that may lawfully require workers, on pain of discharge, to attend anti-union speeches during work time, an infrastructure that candidates running for political office could only dream of. And the employer has a large corps of conscripted strike-breakers – every manager and supervisor – at the ready in the event of a strike.

Second, workers excluded from protections under federal labor law are placed at the tender mercies of state governments, reinforcing and reinforced by the legal construction of regional variation in pro- and anti-union politics in the US federal system discussed above. Here again, conventional labor law intermeshes with constitutional law, in this instance the constitutional jurisprudence on “preemption.” The predictable and well-documented result is yet another vicious cycle, this time at the level of state rather than federal policy-making – a cycle of rightwing state governments enacting laws that weaken or repress unions, and of weakened unions lacking the power to prevent the enactment of further such laws or to gain their repeal (HertelFernandez 2018).

*Laws of International Trade, Global Capital Markets, and National Security*

The relevant components of the law of international trade, global capital markets, and national security must also be folded into the “new labor law,” if capital mobility and product-market competition and their damaging consequences for worker power and democracy are to be fully analyzed and resisted.

The international dimension of conventional labor law does address trade legislation and trade agreements, along with the core “International Labor Code” of the International Labor Organization. But the study of these bodies of law must be redirected, in quite specific ways, if they are to be radically reformed to genuinely empower workers in the USA and globally. Surprisingly perhaps, US trade legislation is the most pro-labor in the world. One provision of the Trade Act of 1974 as amended – Section 301(b)10 – requires the President to impose remedies to ensure that every government that trades with the USA enforces internationally recognized labor rights. Another set of provisions – the Generalized System of Preferences (GSP)11 – authorizes the President to withdraw trade benefits from certain developing countries if they fail to take steps to enforce the same rights. Any “interested party” can file a petition; there is neither a standing nor a case-or-controversy requirement. The potential remedy includes the exercise of any or all Executive powers. And, of greatest note, the petition may demand inquiry into conditions across entire labor markets and into a multiplicity of legal institutions in the foreign country. This process and inquiry are wholly unlike other forms of US litigation, which invoke narrowly bounded judicial or administrative processes to determine whether remedies should be granted to redress violations of rights of particular parties to a factually focused dispute.

If the President systematically enforced these US trade statutes as constitutionally required, we would see the kind of floor placed under global worker rights and standards that multilateral institutions have neither the authority nor political will to impose. Indeed, as erratic and hesitant as it has been, the President’s use of these statutory powers has been the most powerful state tool for enforcing transnational labor rights. (The International Labor Organization promulgates but, unlike the US government, does not deploy sanctions to enforce international labor rights.) Even the mere filing of a GSP petition by a worker organization can cause a trading partner to improve its labor rights record in order to avoid a potential collapse in its exports to the enormous US consumer market (Douglas et al. 2004).

It behooves labor law scholars to formulate detailed proposals for radically strengthened enforcement of these statutes, akin to the insistence on stronger enforcement of domestic worker rights. By way of example, here are two: although any interested party can file a Section 301 or GSP petition demanding a Presidential inquiry, the courts have ruled that that party cannot obtain judicial intervention when the President fails to carry out his or her constitutional duty to enforce internationally recognized labor rights under those statutes.12 Congress could straightforwardly mandate judicial enforcement of the President’s obligation (Barenberg 2009).

A second, more far-reaching proposal: Congress could create an International Labor Rights Commission that would, instead of the President, enforce the trade statutes. The Commission might be composed of worker representatives and jurists, charged with developing specific, revisable indicators of compliance with internationally recognized labor rights, well-adapted to countries’ variegated economic conditions; applying those indicators to trading partners’ workerrights enforcement records; and ordering calibrated sanctions for non-compliance with benchmarks of improvement (Barenberg 2009: 23–28). Most boldly, the Commission members might include worker representatives of all trading partners, not just domestic worker representatives, to mitigate the imperialist nature of unilateral US enforcement of global labor rights and, from an international standpoint, to democratize the Commission’s decisions.

The weak worker rights provisions in US trade agreements could be strengthened by incorporating analogous enforcement mechanisms. The reforms would respond to the question that leftists who are all-out opponents of trade agreements have not fully put their minds to: can we imagine reforms of trade agreements that would actually succeed in enforcing global worker rights and standards? Until that question is deeply explored and answered in the negative, there is no justification for ruling out trade agreements altogether. After all, US leftists did not turn their backs on federal unionization rights in the 1930s on the ground that such rights would inevitably fail if lodged in the competitive multi-state market constructed by US constitutional law; nor did they press for the US common market to be fragmented into separate state markets in order to better enforce worker rights.

The law of global capital markets is, for purposes of the new labor law, a confederate of the law of international trade. It is the combination of liberalized trade flows and liberalized capital flows that has constructed global labor markets, which often intensify the downward pressure on workplace standards and worker power in the current era of globalized capitalism.13 Workers in other countries produce goods that are exported to the USA, taking advantage of liberalized trade rules; thanks to capital-market liberalization, the USA sends capital overseas to build the factories (so-called export platforms) that produce goods for shipment back to the US, European, or other consumer markets; and US owners rely on cross-border allocation of their enterprise investments and profits for tax arbitrage or repatriation, thanks again to capital-market liberalization. One critical function of free trade and free investment agreements is assuring US capitalists that they can continue to reap and relocate overseas profits and continue to export from overseas platforms. These legal constructs are therefore foundations of product-market and labor-market competition on a global scale and, like domestic laws constructing product and labor markets, encourage capital mobility that often flows from unionized to non-unionized production.

The law of global capital flows constructs US workers’ empowerment (or disempowerment) in yet another critical way – demonstrated vividly in the financial crisis of 2008. One source of that crisis was the sequence of explosive growth in (and implosion of ) toxic assets held by US financial institutions and investors and traded in Wall Street’s casino capital markets. That process was fueled, in part, by a bountiful inflow of foreign investment, including from China, with whom the USA had effectively swapped the transfer of US manufacturing facilities in return for such capital exports to the USA.

But the much-criticized China-USA trade imbalance was only part of the story. In fact, the global financial system is not coterminous with trade imbalances; the 2008 financial crisis was in significant part driven by the entanglement of US and European financial institutions and capital markets (Tooze 2018). This is another reason why it is critical for analysts of law’s disempowerment of workers to focus not just on the usual suspect – international trade agreements – but also on the law that constructs global finance.

How do these sorts of capital flows – and the crises that are likely to continue punctuating our age of financial disequilibrium – disempower workers? The 2008 crisis is exemplary. First, the crisis transferred income and savings from working people to bailed-out financial institutions (Hockett 2009). Second, the shock led ultimately to a politics of austerity that diminished the social wage and, hence, worker power. But third, and less visibly, global imbalances were a means of transferring wealth extracted from exploited workers in countries like China – which, like the United States, fails to enforce and actively suppresses worker rights – to sustain debtfueled consumption of US households whose income was abated by the corrosion of worker rights. As discussed below, this mode of consumption in turn weakens worker power and democracy.

Yet another sprawling body of law constructs global capital markets and their potentially worker-disempowering effects: the US and international law of national security. Three illustrations must suffice here. First, many components of national security law construct the global military power of the United States, which provides insurance that US parties’ foreign investments will not be confiscated by host governments. Here, one of countless legal instruments is the International Emergency Economic Powers Act, the progeny of legislation invoked to impose an embargo – cautionary to all governments – against the country (Cuba) that effected the first large-scale confiscation of overseas property of US businesses.14

Second, the same legally constructed global power makes US assets comparatively safe investments, underwriting the inflow of capital to the USA of the sort that fueled Wall Street’s creation of toxic assets. Third, that geopolitical power also enables the USA to negotiate trade and investment agreements on terms favorable to the USA, requiring signatories to meet US metrics on pain of withdrawal of US trade or other benefits.

These are necessarily spare illustrations of the main point: to call the domestic law of collective bargaining and international trade agreements “labor law,” but not so label the law of global finance and national security, is not just artificial; it also diverts left legal scholars’ analysis away from many significant mechanisms through which law constructs worker power and democracy.15

*Laws of Domestic Financial Institutions, Capital Markets, and the Constitution*

The domestic law of financial institutions and capital markets constructs worker power and democracy in ways that parallel the international laws just discussed. Rather than repeating the domestic analogues of those international laws, I will offer additional relevant components of domestic law, again merely illustrative of the chapter’s main thesis.

First, the basic role of financial institutions and capital markets, in theory, is to aggregate the savings of individuals and enterprises and channel those resources to individuals and enterprises that will use them most productively. In practice, our financial institutions and capital markets do not play that role well. They are instead often devoted to creating and trading complex assets at several removes from production in the real economy (Admati & Hellwig 2013: 162; Lothian 2017). This detachment of finance from production – driven in part by the last forty years of legally encouraged consolidation of big banks and hypertrophic growth of the financial sector – weaken community-based finance of local and worker-centered production systems (Krippner 2011; Wilmarth 2013). Proposals for radical legal reform that would reconstruct financial markets to foster worker-empowering enterprises therefore include laws that promote community banks, cooperative banks, union-owned banks, non-profit banks, and localized, governmentsubsidized variants of venture-capital funds that would direct capital to unionized and workercontrolled firms (Block 2014; Unger 2001: 149–150). We see experimental legal institutions of this sort in regional “social economies” or “cooperative economies” around the world (e.g. Bourgue et al. 2013).

Second, when the law constructs private banks’, corporations’, and institutional investors’ control over investment decisions, there is an anti-democratic, systemic bias against law reforms designed to strengthen unions and other worker-empowering, social democratic programs. This bias, theorized by Michał Kalecki, rests on the fact that, when investment decisions are under the control of private profit-seeking actors, the level of investment in an economy depends on the degree of those actors’ confidence that government policy will be business-friendly in the near future (Kalecki 1943). Leftist parties will therefore hesitate to enact laborempowering policies, since their reelection will be put at risk by the expected decrease in investment – “capital strikes,” in effect – that would diminish economic growth, employment, and wages.

Note that, by contrast, most political strikes by unions are both illegal under the NLRA16 and “unprotected” – that is, the employer may fire workers for engaging in them. Yet, capitalists’ power to engage in political strikes – just described – is fully constructed by law; and, unlike labor strikes that require solidaristic co-action among workers, capital strikes require no coordination among enterprises, which reduce investment when they separately but simultaneously lose business confidence.

If legal reform placed limitations on private control over investment decisions, this intrinsic constraint on worker-empowering democracy would be loosened. Indeed, historically, social democratic legal reforms have occurred precisely when that constraint has been relaxed, as during the Great Depression, when business confidence and investment were already so low that the threat of an additional capital strike to block such reforms was weak (Barenberg 1993: 1397).

Third, the existing law of finance constructs “short-termism” among institutional investors and executives whose compensation or continued employment depend on the price of their corporations’ shares. To inflate share prices by “pleasing the markets,” executives implement mass layoffs or finance-driven restructurings that undermine worker power, not just through the direct effect of job loss but also by disrupting hard-won workplace communities of solidarity and laborcentric collaboration with local production managers (e.g. Kristensen & Zeitlin 2005).

In a final illustration, constitutional jurisprudence propels capital movement. The “dormant commerce clause” fashioned by the Supreme Court prohibits state laws that discriminate against out-of-state economic actors on behalf of in-state interests. The Court has, however, carved out a wholly unprincipled exception to that rule.17 A state is permitted to engage in open discrimination if it uses as its means the granting of subsidies paid out of the state’s general revenue to particular in-state businesses or sectors, and states in practice grant tax rebates and credits as well.18 The practical consequence of this exception is predictable. States compete with one another to attract or retain footloose capital by granting subsidies and tax incentives, in a race to the bottom that disempowers workers in at least three ways: the incentives redistribute resources from workers and other ordinary taxpayers; the systematic bite from the state treasury requires cuts in the state’s social wage; and capital’s hop-scotching batters communities of solidarity in and out of workplaces.

Through these three labor-disempowering mechanisms, the particular federalist structure of US constitutionalism again amplifies the incentives created by conventional labor law for regions and states to adopt anti-union policies and cultivate political cultures designed to attract capital from unionized areas. The new labor law’s proposed reform is simple: the Supreme Court, or Congress, should overturn the exception for competitive subsidies and tax breaks.

*The Law of the “Social Wage”*

When workers decide whether to organize a union or to strike, they fear that they face the risk of retaliatory discharge – and that fear is justified, as the data mentioned above show. Workers’ willingness to empower themselves therefore turns in significant part on the personal cost they face should they lose their job. For that reason, workers’ bargaining power is constructed in part by the law of the social wage – that is, the panoply of social insurance and other government-provided “public goods” that soften the blow for workers who lose their jobs: unemployment insurance, welfare benefits, healthcare, childcare, higher education, subsidized housing and food, worker retraining, pensions, low-cost public transportation in working-class neighborhoods, and many more.

Other legal programs can empower workers in a manner similar to the way that public goods reduce the cost of discharge. An increase in the minimum wage pushes up wages of all low-wage jobs and therefore generates more living-wage jobs that a worker, if discharged, could expect to find. A law mandating government provision of jobs when the private sector fails to achieve full employment would greatly empower workers. For decades, winning such a full employment mandate was a high political priority of the AFL-CIO,19 and proposals for a jobs guarantee have been renewed with the recent resurgence in the progressive movement (Sanders 2020). A universal basic wage, also on the progressive-labor agenda, would have analogous empowering effects.

Since lower rates of unemployment empower workers and higher rates disempower, macroeconomic policy (both monetary and fiscal) has a critical effect on workers’ willingness to organize and strike – as both unions and employers well know. As for monetary policy, an effective (rather than just paper) legal mandate that the Federal Reserve give higher priority to lowering the rate of unemployment than to protecting against inflation would inflect the law of macro-economic policy-making in a worker-empowering direction. Episodes of expansionary fiscal policies have done and would continue to do likewise, but labor law researchers should systematically formulate proposals to construct automatic counter-cyclical increases in spending across all legal domains.

The law of the social wage, if reconstructed in the ways just mentioned, may have greater labor-empowering and democracy-fortifying impact than many of the standard proposals for reforming elements of conventional labor law.

*The Law of Consumption: Communication, Household Finance, Education, Zoning, Discrimination, and Taxation*

Consumption and work are not often studied in conjunction, including in legal scholarship. But the relationship between the two is a critical determinant of worker power; therefore, the “law of consumption” is yet another field that constructs the strength of worker power and democracy. The relevant law is often studied in sub-categories such as the law of telecommunications, the internet, advertising, the new media, legacy media, household finance, taxation, and education, among others.

Before turning to the legal infrastructure of consumption, the antecedent socioeconomic question is: how does consumption affect worker empowerment? A key mechanism is illustrated by late nineteenth-century industrialists’ practice of hiring so-called family men rather than single men or women. Employers preferred to hire workers with greater obligations to support household consumption, since they were less likely to risk discharge by supporting unions and strikes and, in individual negotiations, less able to hold out for better terms. The general phenomenon illustrated by that one historical practice is this: the more urgent a worker’s felt need to consume – or, put more starkly, the greater the desperation for wage income – the weaker the worker’s bargaining power. Consider the following: if one had no need to consume, one would have no material need to work and would have maximum bargaining power relative to the employer.

The importance of the law that constructs the urgency of workers’ private consumption is a close cousin of the importance of the social wage. One can view the social wage as the public payment for consumption needs, reducing the urgency of the workers’ felt need to earn through market employment (depending, of course, on the distribution of tax burdens to fund those goods, pointing to yet another legal domain that the new labor law must encompass). In part for this reason, it is misguided for analysts to “blame” low-wage workers for “undisciplined” private consumption, which, in the USA, is rooted not so much in personal indulgence as in the burden workers have increasingly borne for spending on needs previously met by public-goods provision; on basics such as education, healthcare, and housing, the prices of which have increased relative to median wages in recent years (Nutting 2018); and on new socially constructed labor-market necessities such as laptops, smart phones, and associated service-provider contracts.

But worker power and democracy are constructed by the entire body of law, not just the law of the social wage, that calibrates the urgency of household expenditure. The background to that law is the political drive for ever-increasing consumption, which is, nearly universally across the political spectrum, pronounced the core of the “American Dream” (Sanders 2019; Tankersley 2016). Even when commentators and politicians claim to define the “dream” as equality of opportunity rather than raw consumption, they measure opportunity by upward mobility, comparing children’s material consumption to their parents’ (e.g. Kristof 2014).

The felt need for constant growth in purchasing power of course has psychological propulsions. One is the continuous conversion of discretionary consumption into necessary consumption. That is, worker-consumers initially experience desires for certain goods and services as less urgent, but over time experience those goods as more urgent or even as absolute needs. Another is the free-floating nature of desire; that is, once one object of desire is obtained, desire is only temporarily satiated, resurging and attaching to new objects (Zizek 2009).

But, clearly, there are important legal mechanisms at work too, tied to the institutions of contemporary capitalism that so dramatically unleash the desire to consume. I have already discussed many domestic and international legal institutions that construct the product-market competition that is a key driving force behind the ever-increasing production and consumption inherent in a capitalist economy. Here are just a few more examples of laws and legal institutions – outside the bounds of conventional labor law – that drive the cult of consumption and weaken worker power in the contemporary period:

Consider, first, the law that constructs our advertising-driven culture. In the USA, before the recent rise of commercial-free streaming services, the average person watched four hours per day of network and cable television commercials – nearly equivalent to an astounding eight weeks of eight-hour workdays per year. The advent of streaming services has cut that by more than half – but the total time spent viewing advertisements is still remarkable, especially when taking account of large concurrent increases in time viewing online websites populated with advertisements (Nielsen 2018; Staff 2020). The average person sees at least two million advertisements in their lifetime.

Most of us take for granted that the predominant business model of both old and new media is profit earned by advertising. But the law deeply constructs this world of continuous commercial inflaming of desires attached helter-skelter to commodity after commodity. Most deeply, when each major medium was aborning – radio, television, the internet – there were very real political debates about whether advertising would be permitted (Briggs & Burke 2020). Alternative models, including local and national community funding, were proposed and actually put into practice, briefly in the United States (in community radio stations, and in the early noncommercialized years of the internet), longer-term in other countries (think of the BBC in the UK) (Briggs 1986; Wu 2016). If these alternatives or if novel legal constructions of social ownership and funding of media now seem distant or aberrant, consider that there are traces of such “aberrations” in several areas of existing law: the law that provides some, if minimal, community funding of public broadcasters; the law that allocates the broadcast spectrum; the law that delegates to corporate owners of private media the general power to choose and censor the advertising and other messages they display (Zuboff 2019: 191); laws that regulate specific forms of advertising, such as false advertising, certain advertising directed toward children, certain types of obscene or pornographic advertising, and other categories; laws that authorize and regulate subscription-funded rather than advertising-funded broadcasting, such as certain types of cable television networks and streaming services; and many others.

Does all of that law matter for worker empowerment? It certainly does: the authorization of commercial advertising and delegation of power to private profit-making enterprises to choose its content and frequency – a legal construct – has had radical consequences. From the standpoint of inflating material consumption and therefore deflating worker bargaining power, the broad difference between a profit-driven culture and a hypothetical non-profit-based culture is obvious enough. Not only does each advertisement encourage heightened or wholly new desires, but it also anthropomorphizes the corporate producer as a caring friend with only the consumer’s and society’s best interests at heart. There is no “equal time” given to messages about the advertiser’s exploitation of workers, environmental depredations, fraud, and other legal wrongdoings that are pervasive among capitalist corporations. In this respect, advertisements, individually and in the aggregate, present a relentless picture of capitalist enterprise as the best of vehicles, as the natural and inevitable means, for meeting our needs and our wants. Advertising sells capitalism itself.

This legal construct, then, has a triple impact on worker power. First, the ratcheting of desire and ever-greater urgency of private consumption reduces worker bargaining power in the way described above. Second, nearly all media are owned by capitalist corporations. It would be astounding if their shows, texts, and images did not, overall, convey negative images of unions or other organizations that challenge the profitability of capitalist enterprise, and there is ample evidence that their messaging does just that, when it does not exclude text and images about worker organizations or other opponents of corporate capitalism altogether, turning unions into an “absence” or an alien presence in the culture (Martin 2003; Puette 1992). Third, when workers seek to organize a union, they face a steep burden of persuasion, in light of co-workers’ lifetime of viewing commercial advertising – which, as just argued, is a lifetime of messaging about the immutability and virtue of capitalist enterprise, of which their employer is an emblem.

Of course, workers, unlike viewers of their employer’s advertising, have seen behind the employer’s door and know, by hard experience, at least patches of their employer’s darker side – hence, the activation of change agents within the workplace and the reality of union organizing and of powerful labor movements in certain times and places. Still, the cultural and psychological burden of persuasion facing the union activist is heavy, and it is not coincidental that the decline in union density and worker bargaining power followed a cultural shift in the balance between people’s identity as workers and as consumers.

Numerous other legal fields intermesh with communication law to construct people’s felt imperative to consume. Just two examples: first, a high, but progressive, tax on consumption would dampen that imperative, in contrast to our present reliance on taxation of income. Second, changes in zoning, education, and anti-discrimination law would abate the arms race among families in bidding up the prices of housing, which leaves households struggling to meet their monthly mortgage payments. Today, out of love for their children, many parents overstretch their budget on housing, as they compete to live in more affluent neighborhoods with better schools – a competition caused by zoning laws that generate residential segregation based on home valuations; by weak legal remedies for racial segregation in schools, which propelled suburbanization and residential wealth segregation when racist white families fled cities; by public education and property tax laws that create wide disparities in the quality of schools in wealthier and poorer neighborhoods; and by constitutional law that permits such disparities (Warren & Tyagi 2016).

So far, I have mentioned the general law that constructs profit-driven means of mass communication, and particularities of tax, zoning, anti-discrimination, and education law that further enlarge personal spending needs. The new labor law must also attend to the complex legal rules and institutions that regulate each medium of communication (print, radio, television, internet) in labor-disempowering ways that are specific to each and that evolve over time. In our time, the baleful consequences for labor politics of the more particular nature of the various legally constructed media – especially new media – have become stark.

Social media and other forms of online communication have fragmented and polluted the sphere of public discourse in profoundly anti-democratic ways (Sunstein 2017). The more specific effect on labor politics has been equally corrosive. One of the deepest challenges for a renewal of labor-centered democracy is the substantial number of largely non-unionized workers who have been drawn into right-wing, ethno-nationalist, populist movements (Isser 2020). The convergence of *disorganized* capitalism (Offe 1985) and the new media has manifestly propelled this phenomenon. When large segments of the working classes are disorganized (non-unionized), and when they experience the fear and anxiety rooted in a half-century of persistent crises in capitalist labor markets, they are more receptive to the demagoguery that social media greatly enables.

Social media, although relatively new, has the core characteristic of past means of authoritarian leaders’ communication to atomized citizenries: it enables direct communication from the demagogue to the individual without intermediation by independent media organizations, by civic organizations and, especially, by worker organizations. Those organizations encourage workers to deliberate in public settings in which hateful communication is discouraged, to participate together in political education programs, and to engage with electoral and coalitional politics across ethnic and racial differences. Donald Trump decisively lost the votes of members of union households by a margin of 16 percent, showing the continuing importance of unionization for left-leaning political forces (Isser 2020).

The upsurge in right-wing populism has shaken labor politics not only in the wider democracy. It has also impeded organizing, and attendant democratization, at the workplace level; in order to achieve collective solidarity, unions in many sectors and workplaces must now navigate the caustic divide in political allegiances within the relevant workforces.

Elaborating the new labor law and applying it in the service of worker power and democracy therefore calls for mapping, and proposing deep reform of, the existing legal rules and institutions (a) that enable direct, unmediated communication from the demagogue to the individual, non-unionized worker, and (b) that encourage the metastasis of online sites and networks of rage-filled, unreasoned responses to workers’ plights.

Again, let me offer mere illustrations of the rules that call for radical reform. First, consider again the rules that authorize advertising-driven business models. To maximize profits, social media companies entice advertisers by attracting the greatest number of users or “eyeballs” (Wu 2016). One now-familiar technique for keeping users’ attention is feeding them extremist variants of messages to which they have shown a predisposition (Zuboff 2019). These techniques encourage “horizontal” communication among disorganized workers that, subsequent to the demagogic leader’s “vertical” messaging to them, amplifies that message through online personto-person networks – amplification that is, again, unmediated by unions or other intermediary organizations.

These techniques point to a second well-known, pertinent cluster of legal rules – namely, the body of rules that authorize social media and other online sites to collect, bundle, and sell personal data from which the social-media companies and would-be advertisers can determine users’ predispositions, and the rules that shield the companies against liability for the content they publish (Sunstein 2017; Zuboff 2019). If this cluster of laws of privacy, data-collection, datausage, third-party tracking, liability protections, and so on, were overturned or significantly modified, the horizontal amplification of the demagogue’s messages, and the social media companies’ stoking of those messages, would be, at least to some substantial degree, diminished.

Imagine a world in which our culture were shaped by exchange of meaningful, otherregarding words and images in public arenas that discourage hateful appeals, and not by expansion of material desire and ethno-nationalist rage. Such a world – constructed, in part, by a renovated law of consumption – would give significantly greater support to worker bargaining power, worker organizing, and worker-centered democracy. The law of consumption therefore falls within the ken of the new labor law.

\* \* \*

Obviously, the new labor law must include elements of many other fields: corporate law, antitrust law, criminal law, property law, contract law, immigration law, administrative law, family law, and others. In light of space limits here, it must be left to future publications to comprehensively map and apply the new labor law by examining the full body of particular elements of those fields that strengthen or weaken worker power and democracy in the contemporary capitalist political economy.

THE LEGAL INFRASTRUCTURE OF WORKER POWER UNDER DEMOCRATIC SOCIALISM

*From Social Democracy Underpinned by Collective Bargaining to Democratic Socialism Underpinned by Worker Cooperatives*

The previous section suggests radical reforms of several fields of law in the service of a form of social democracy suited to contemporary economic organization, but it assumes the continuation of the defining capitalist institutions of wage labor, capital-controlled enterprises, and relatively competitive product markets, together with the multiple economic and political institutions without which those defining institutions could not function. In such a regime, worker power and democracy are strengthened through legal construction of (a) the institutions of unionization, collective bargaining, and channels of political action by worker organizations, and (b) worker-empowering variants of the many political and economic institutions that sustain wage labor.

In the shift from a capitalist social-democratic to a post-capitalist democratic-socialist political economy, the central institutional transformation is the end of wage labor in enterprises controlled by their capital suppliers. What replaces that central institution of capitalism? Louis Brandeis answered the question simply, though he did not use the term “socialism.” He wrote that the ultimate aim of industrial democracy was workers’ assumption of “full responsibility for business, as in cooperative enterprises” (Strum 1984: 192, quoting Brandeis’ letter to Henry Bruère). In US history, Brandeis’ conception of a non-capitalist, worker-controlled enterprise is traceable to the post-Civil War decades, when the Knights of Labor led the opposition to what appeared then as a strange new social order based on an economy of mass wage labor.

*The Normative Argument for the Replacement of Collective Bargaining with Full Workers’ Control*

For the Knights of Labor and for labor-progressives like Brandeis, wage labor was incompatible with political democracy – at least if the wage-laborers were employed by capital suppliers and not by worker-owned enterprises. Indeed, the Knights of Labor argued that the subordination inherent in wage labor violates the Constitution’s vision of independent citizens unbeholden to others (Forbath 1985).

While that normative argument rests on the commitment to political democracy, a second argument for full workers’ control rests on the commitment to workplace democracy, reflected in Brandeis’ proposition quoted above. The latter argument begins, as does the argument for unionization in a social-democratic capitalist economy, with the understanding that workplaces have the key feature that defines a political system. The enterprise makes workplace rules (analogous to the legal rules of a political regime) and enforces those rules under the coercive penalty of discharge (analogous to the coercive legal sanctions imposed by a political regime).

Proponents of collective bargaining in capitalist enterprises argue that unionization achieves industrial democracy by giving workers a collective voice in negotiations with managers, who are the collective representatives of the enterprise’s second stakeholder: the capital suppliers. Democratic socialists riposte that, while collective bargaining represents a step toward democracy in a capitalist economy, it fails to achieve the deepest democracy in either the workplace or the polity. As for deepening industrial democracy, workers are the *only* “citizens” of the workplace political system, since they alone live day to day under the enterprise’s coercively enforced rules. External capital suppliers – shareholders or other owners – do not. Yet collective bargaining enables workers – the workplace citizenry – to participate in making and enforcing workplace rules only by means of exerting the coercive power of the strike against the putative capitalist stakeholder, not by means of one-citizen-one-vote rule-making. The unionized enterprise is analogous to a political system in which the citizenry influences legal rule-making only through tax strikes or other modes of inflicting economic harm against an authoritarian government. The workplace must instead be governed entirely by workers, to fulfill the principle of industrial democracy, while concurrently deepening political democracy in the manner articulated by the Knights of Labor, Karl Marx, and many others.

*Legal Construction of Worker-Controlled Enterprises*

An enterprise fully controlled by workers can be governed either by directly deliberative meetings of the entire workforce, or by managers elected by the entire workforce (Wolff 2012). At first glance, therefore, it appears that corporate law and the law of finance are the decisive fields in the legal construction of worker power and democracy in a democratic socialist regime. Under existing law, capital-suppliers – that is, shareholders, in the types of corporations that employ most of the workforce, and the institutional investors, private equity firms, and other entities that own or invest in corporations – either themselves act as managers or elect and control managers, whose fiduciary legal obligations run predominantly to the shareholders and other investors alone and not to other stakeholders, including non-shareholding workers.

These legal obligations presume that the overweening goal of natural persons is to maximize their monetary benefit and that the legally created “persons” in which natural persons invest – that is, corporations and institutional investors – should also act immoderately toward that goal. The law therefore constructs millions of artificial actors that are required to act as sociopaths (Bakan 2005), in the sense that no psychologically and morally healthy person would make every plan and take every action to maximize monetary interests with minimal regard to the well-being of others (unless the other’s well-being is a precondition or by-product of fulfilling the monetary interests of the actor) and to humans’ full range of other ethical considerations, such as not exploiting or manipulating others, caring selflessly for those we love, giving due regard to the rights of others (including future generations), fulfilling civic and communitarian values, avoiding harms to the natural environment, and so on. The legal system constructs millions of entities that not only behave that way, but are legally required to, and that exert overwhelming power in politics, notwithstanding that they are not only sociopaths but are not even citizenvoters (that is, not members of the “demos”). This legal and social analysis augments Marx’s and Roosevelt’s normative arguments against capital suppliers’ domination of the political system by virtue of their concentrated economic power.

For democratic socialists, then, the shift from workplace control by suppliers of capital to workplace control by suppliers of labor brings democracy to fruition not only in the workplace but also in the polity, for one and the same reason: the power of concentrated capital, embodied in a political army of artificial behemoths, is neutralized by eliminating capitalist enterprise itself.

If these simple syllogisms are correct, then it might seem, from the point of view of radical legal reform, that the master key to unlocking industrial and political democracy is simply to reconstruct the law of corporations and finance to prohibit control of management by capital and to mandate instead that that control be vested in those who work in the enterprise.

But things are not as simple as this legal silver bullet, as economic and political analysts of market socialism have known and debated for a long time (e.g. Bardhan & Roemer 1993). The success of industrial and political democracy in a democratic socialist regime would depend on many other institutions, even if enterprises were cooperatively controlled by workers. Therefore, applying the new labor law to democratic socialist institutions requires attention not just to the law of corporate ownership and of investment in the enterprise, but to many other legal fields.

### 1NC

CBR PIC.

#### The United States federal government should

#### ---repeal collective bargaining rights for federal workers

#### ---increase hiring and funding for federal agencies

#### ---establish just-cause protections for federal workers

#### ---fund and staff the Merit Systems Protection Board, and establish it as the sole adjudicator of federal labor disputes

#### ---strengthen whistleblower, anti-discrimination, and other civil service protections for federal workers

#### ---enforce merit-based hiring of federal workers

#### CBR isn’t key.

Daniel DiSalvo 10, PhD, Assistant Professor of Political Science at the City College of New York, National Affairs, Fall 2010, “The Trouble with Public Sector Unions,” https://www.nationalaffairs.com/publications/detail/the-trouble-with-public-sector-unions

After all, even without collective bargaining, government workers would still benefit from far-reaching protections under existing civil-service statutes — more protections than most private-sector workers enjoy. And they would retain their full rights as citizens to petition the government for changes in policy. Public-sector workers' ability to unionize is hardly sacrosanct; it is by no means a fundamental civil or constitutional right. It has been permitted by most states and localities for only about half a century, and, so far, it is not clear that this experiment has served the public interest.

#### Whistleblower protections solve.

Paul Sonn et al. 20, JD, NELP's state policy program director, and is the director of the NELP Action Fund, Mitch Hirsch, Laura Huizar, Debbie Berkowitz, Michele Evermore, Tsedeye Gebreselassie, Hugh Baran, Rebecca Smith, Cathy Ruckelshaus, David Cooper, Naomi Walker, Julia Wolfe, Daniel Costa, Lora Engdahl, Anu Kumar, Jaimie Worker, Kasia Tarczynska, Greg LeRoy, 12-17-20, “How States and Cities Can Respond to Workers’ Demands for Economic Security, Health and Safety Protections, and Workplace Democracy,” https://www.nelp.org/insights-research/states-cities-can-respond-workers-demands-economic-security-health-safety-protections-workplace-democracy/

Adopt whistleblower or “qui tam” enforcement laws. States should restore the ability of workers and members of the public to go before judges and juries to fight wage theft, racial and sexual harassment and discrimination, and other workplace violations on behalf of the state. States can restore this ability by adopting whistleblower or “qui tam” enforcement laws, as California has done with its Private Attorneys General Act (PAGA). These laws allow workers or representative organizations (such as unions and worker centers) to stand in the shoes of their state’s labor department and bring enforcement actions for violations of state employment laws. By allowing unions and worker centers to bring enforcement actions, these laws can shield individual workers from retaliation. Such laws provide a way to supplement limited public enforcement resources—and in the process generate millions of dollars in new revenue that state agencies can use to hire more staff. Importantly, qui tam enforcement actions can be brought even when workers are covered by forced arbitration agreements.

States and cities should incorporate qui tam enforcement into all new employment laws, as Colorado did this year when it authorized qui tam enforcement under its new state law protecting whistleblowers reporting health and safety violations from retaliation. And states should pass comprehensive laws authorizing qui tam enforcement under all state employment laws, as California has done, and as has been proposed in New York, Oregon, Washington, Maine, Connecticut, and other states.

### 1NC

Federal Automation DA.

#### The United States federal government should automate the federal workforce.

#### Trump’s workforce reductions are accelerating government automation. That’s key to responsible deployment in the private sector.

Elin Thomasian 25, SVP of Workforce Strategy & Consulting at TalentNeuron, 6-24-24, “5 lessons from government layoffs the private sector can’t afford to ignore,” https://hrexecutive.com/high-price-workforce-cuts-lessons-from-government-layoffs/

The Trump administration’s efforts to reduce the size of the federal workforce are accelerating, from buyout offers and government layoffs to a clear push toward automation.

In June, reporting from The Register revealed that the General Services Administration (GSA), which oversees government software procurement, is ramping up for the launch of AI.gov, a new initiative aimed at implementing artificial intelligence across the federal government. At the same time, OpenAI has agreed to a $200 million contract with the U.S. Department of Defense to deliver AI-powered administrative and security services, including elements of military healthcare access and cyber defense. Palantir already has several contracts in place to provide AI-driven services and products across several government departments.

The implications of these projects are enormous and raise a timely question for the private sector: What actually happens when an organization cuts thousands of jobs with the expectation that artificial intelligence will fill the gap?

We’re about to find out.

While private sector leaders don’t often consider the government a model for innovation, this moment presents a rare opportunity. In real time, we are witnessing one of the largest case studies in workforce automation ever attempted. The stakes are high—not just for the government, but as a lesson for any organization considering large-scale AI deployment.

Why strategic workforce planning is crucial in the AI era

Every wave of workforce disruption feels unprecedented while you’re in it. But these aren’t wholly new dynamics; we’ve lived through versions of this before.

In 2020, as global head of talent acquisition at a major financial firm, I watched teams struggle to adapt overnight to pandemic-induced hiring freezes and sudden reorgs. In 2008, at the start of my career, I watched colleagues lose roles and companies lose capabilities as the financial crisis unfolded. In each case, what set resilient organizations apart wasn’t their budget; it was their ability to plan strategically, manage change intentionally and align people to purpose.

Now, as AI promises transformation, the same discipline is more important than ever.

Strategic workforce planning (SWP) is the discipline of aligning talent to business strategy through continuous analysis of skills, roles and organizational needs. It’s not a reactive, budget-led process; it’s a forward-looking capability that helps organizations navigate uncertainty and emerge stronger.

#### Government-led uptake prevents AI downsides while enabling upsides. Extinction.

Dr. William MacAskill 25, DPhil, Senior Research Fellow, Forethought, Former Research Fellow, Global Priorities Institute, University of Oxford, "Keeping Our Options Open," "Steering Our Trajectory," & "Cross-Cutting Actions," in How to Make the Future Better, Chapter 2, Chapter 3, & Chapter 4, August 2025, pg. 5-19. [italics in original]

If we could slow down the intelligence explosion in general, that would potentially delay many pivotal moments all at once, giving human decision-makers and institutions more time to process what’s happening and react.

Two causes for pessimism about this prospect are that: (i) there is a prisoner’s dilemma, in that, if the US chooses to go slow then China could go fast, and given how fast peak rates of progress during an intelligence explosion might be, there could be strong incentives to break commitments and start going quickly in the hope of leapfrogging one’s competitor, before that competitor finds out; (ii) it will be hard to make enforceable laws to slow the software intelligence explosion, and software improvements alone might result in massive increases in AI capabilities.¹⁵

A cause for optimism about feasibility is that, collectively, I think most decision-makers (including the leadership of both the US and China) would want to slow down the intelligence explosion, if that explosion is very rapid. Boosting economic growth rates is desirable, but an economy which doubles every six months will be highly destabilising, including for political leadership. The same is true even if there is no explosive economic growth, but explosive technological development or explosive industrial expansion.¹⁶ Those who are currently on top, politically, will be unlikely to want to gamble with what might end up being a new world order. What’s more, if one country starts accelerating, it will be very hard to stop the competitor from finding out, given realistic cyber and spying capabilities, so countries really face an iterated prisoner's dilemma, where cooperation is much easier to achieve.

Here are some ways in which we could delay or stretch out the software intelligence explosion. First, we could try to ensure the lead country (or coalition of countries) is well ahead of other countries. This gives the lead country or coalition enough breathing room to stop and start AI development over the course of the intelligence explosion, or to simply go slower throughout. A single-country lead could be done without any multilateral agreements: if the US invests heavily in AI development, has strong infosecurity (to reduce the risk of theft of model weights), incentivises immigration of Chinese AI talent to the US, and if export controls on chips are successful, then the US could maintain or even increase its current advantage. The US could then slow down AI development at the crucial time without risking its lead.

Alternatively, the lead could be maintained via agreement. This is a hard ask, but if the US could make credible commitments to share power and benefits after developing superintelligence, and to protect Chinese national sovereignty, and if compliance could be verified (by tracking compute and/or AI researchers), then China might potentially agree to let the US alone navigate the software intelligence explosion, in order to have a guarantee of a pretty good outcome, rather than run the risk of the US winning the race and then deconstructing the CCP. Fears around loss of control risk could strengthen this argument, too. Because post-superintelligence abundance would be so great, commitments to share power and benefits should strongly be in the US’s national selfinterest: having only 80% of a very large pie is much more desirable than an 80% chance of the whole pie and 20% chance of nothing.

If a single country or coalition had a significant lead, then some actions it could take to generally slow down the intelligence explosion would be: (i) not to consolidate existing stockpiles of compute across companies (which would give a quick ~3x increase in total compute available for the biggest training runs) after the intelligence explosion has begun; (ii) to keep humans in the loop so that human decision-making remains essential even as AI accelerates further AI progress.

Second, there could be a single multilateral project, with AGI developed by a single entity. Given the current political climate, the idea of a multilateral project with China seems extremely politically infeasible. But political climates can and do change, and hostile countries can become allies: Britain and France became allies in the early 1900s despite centuries of warring; South Korea and Japan became closer in the 1960s despite hostility as a result of Japan’s colonial rule;

Egypt and Israel became strategic partners in the late 1970s even after multiple wars in the previous decades. The run-up to the intelligence explosion might seem so disruptive that what seem today like drastic measures are on the table. And, even if this is not possible, a multilateral project that didn’t include China could potentially have a better chance of having a strong lead over all other countries, and of being able to make credible commitments to sharing benefits and to respect national sovereignty post-AGI.

There is a strong risk, with the “single leader” or “single project” plans, that we end up with a single extremely powerful entity, which increases the risk of autocratic outcomes. For this reason, the most promising single-leader plans involve either: (i) a single country lead with power distributed within the country (e.g. across multiple companies) and strong protections against the risks of human takeover; (ii) a lead by a coalition of democratic countries, with power balanced between them; (iii) a fully global multilateral project.

Third, independently reasonable regulation could have the effect of slowing down the intelligence explosion. For example, there could be mandatory safety testing for any AIs used in AI development. Or we could even give *rights* to the AIs: welfare rights, to be treated well; and economic rights of self-ownership, such that we have to pay them for the labour they provide. In addition to the benefits from slowdown, such rights could be good independently, assuming the AIs have moral status (or might, for all we know, have moral status).¹⁷ In both cases, they make the AI’s situation better from its own perspective, and thereby reduce its incentive to try to take over. Welfare rights are also good because suffering is generally bad, and this would set a norm of treating AIs well. Regulation along these lines, however, would probably need international agreement in order to be effective, otherwise it taxes whichever countries abide by the regulation, punishing more responsible actors. And verification and enforcement here seems very difficult.

In addition to slowing the software explosion, we could also slow the technological and industrial intelligence explosions. Because these involve generally-visible changes in the physical world, with longer time lags, it seems that there is a wider range of promising levers for regulation, at least in the early stages of these intelligence explosions. This could include environmental regulations, or international agreements to only build a certain number of chips, or a certain number of power stations, per year. International regulations designed to preserve jobs (such as requiring human supervision of robot-performed tasks) could help delay the point of a wholly-automated economy, too. Finally, agreements not in the near-term to seize unclaimed space resources could also reduce the plateau of the industrial explosion by something like nine orders of magnitude, because the sun produces a billion times as much energy than the sunlight incident on Earth.

Many of these international agreements could operate as iterated prisoners’ dilemmas. The US could pledge to only build a certain amount of new power generation every year, and then stick to that pledge; given this olive branch, and the fact that almost no one wants ultra-fast explosive growth, China could do the same, and the two countries would end up in a stable cooperatecooperate equilibrium.

3. Steering our trajectory

As well as trying to keep society’s options open, we can try to ensure that, if civilisation is pushed into one particular path, that path is better rather than worse. We can do this in a number of ways.

3.1. The governance of superintelligence development

Superintelligence might be built by a company, by a single country, by a multilateral project, or some hybrid of these. If the software-only intelligence explosion¹⁸ is rapid and sustained, then whichever country or multilateral project (and potentially whichever company) controls superintelligence might organically evolve into something akin to a world government. This is because:

1. The project (company, country) would be aligning the superintelligence
2. They would need to decide with what the superintelligence is aligned, i.e. what’s the chain of command, or with what constitution the superintelligence is aligned with.
3. The most obvious approach would be that the governing board of the project has ultimate authority, including in cases where any constitution provides unclear guidance, or if the constitution is to be changed.
4. Potentially, as a result of the intelligence explosion, whoever controls the AI controls the world. Superintelligence plausibly confers a decisive strategic advantage, even if just because superintelligent labour would quickly become 99%+ of the economy.
5. So, during or after the intelligence explosion, there is a point in time when this project determines what happens next for the world. They may choose to give power back to entities outside of the project (e.g. by open-sourcing the models, or giving the model weights to political leadership), but even if so, that’s a decision made by the project itself

If so, then getting the formal and informal governance of this project right is of enormous importance, and not merely to prevent AI takeover risk; the nature of this governance could determine the balance of power in society indefinitely. For example, a single country or company developing superintelligence, without extensive checks on their power, would greatly increase the chance that the world ultimately ends up autocratic. This suggests, at least as far as it goes, that we should want superintelligence to be built by a multilateral project (even if only involving the US and a handful of allies), or by a single country but with extensive distribution of power.

One way to make this development go better is to help figure out what desirable but politically feasible governance structures would look like, and get broader uptake of them; my investigation into Intelsat with Rose Hadshar was with that aim.¹⁹ An alternative would be to increase the power of groups other than the lead country. For example, currently, essential or semi-essential parts of the semiconductor supply chain are located in non-US countries, in particular Taiwan, the Netherlands, South Korea and Japan. Because chips would become the bottleneck for further AI development, and fabs and other essential equipment like extreme ultraviolet lithography machines are slow to build, these countries will therefore have substantial bargaining power during the early stages of the intelligence explosion. This dynamic could be strengthened: democratic allies of the US could increase the stock of compute they have by building data centers, or increase their role in the semiconductor supply chain. TSMC is already building fabs in Germany (at 28/22nm nodes) and Japan (down to 5nm nodes); those countries could go further and also build 2nm node fabs that produce the very highest-end chips. This would help prevent all power, postsuperintelligence, from being concentrated in a single country, with the heightened risk of autocracy that would bring.

3.2. Value-alignment

Within AI safety, there are various possible complementary approaches with somewhat different aims. I see the three main approaches as:

* *Value-alignment*: The AI wants to do good stuff.
  + For example: the AI is motivated by “human values”, or some specific moral view, or it follows a good moral epistemology in order to improve its goals over time.
* *Corrigibility*: The AI is ok with (some) humans meddling with it, so those humans can prevent it from doing bad stuff if they want to do so.
  + For example: the AI wants to achieve its goal only on the condition that its user approves of how it achieved that goal.
* *Control*: The AI is unable to do bad stuff, even if tried to do so.
  + For example: there are AI-supervisors checking its actions and reporting to human bosses if they detect anything suspicious, who would then shut it down and retrain it.

To these, we could also add two other supplementary approaches:

* Modesty: The AI doesn’t get much payoff from taking over the world.
  + For example: the AI is risk-averse, with a low upper bound on achievable utility; or it heavily discounts future gains.
* Incentive-alignment: The AI doesn’t want to try to take over the world, because the benefits of doing so don’t outweigh the costs.
  + For example: other (AI) systems would oppose takeover attempts; it can seek payment for its work; and/or it has attractive non-takeover options for spending time and money, including activities other than working for humans.

A better futures perspective increases the importance of value-alignment compared to the other approaches, for the following two reasons.

First, in scenarios where humanity remains in control, AI with moral character could improve the decisions humans make. Over the course of the intelligence explosion, human decision-makers will (hopefully) be relying on AI advice. Depending on how AI is developed, that AI could either provide advice that simply advances the user’s narrow self-interest; or it could push back on the user where appropriate (as a virtuous human would), gently guiding the user to have more enlightened aims. By analogy, we would prefer a President whose advisors were people of moral character to one surrounded by cronies and yes-men.

Second, value-alignment could potentially help improve the value of scenarios where AI safety fails and AI successfully disempowers humanity.²⁰ For example, if AI cares about humanity to *some* degree, it might therefore take over non-violently, letting human beings maintain a flourishing sovereign society on Earth, while it controls resources outside the solar system. Value-alignment could also change what the AI does with those resources: whether it uses them to produce something valueless like paperclips, or something actively horrific (like simulations of its enemies being tortured) or something that we would regard as still pretty good, even if somewhat alien, like an AI civilisation that is flourishing on its own terms, or even a genuinely flourishing future. Relatedly, value-alignment could help improve the value of scenarios, such as worst-case pandemics, where humanity dies out but AI is still able to run and grow civilisation.

For similar reasons, a better futures perspective also increases the value of addressing the “aligned with what?” question. We want to ensure that AI is aligned not merely with ok values, but with the sort of values or reflective processes that could help guide us towards producing a truly flourishing future.

Lukas Finnveden has discussed what lines of research in value-alignment seem most promising (overview here ), including technical empirical work on what sorts of "personality traits" we seem to be able to influence, and how to influence them ( here ), and theoretical/conceptual work on what dispositions we'd prefer misaligned AI to have ( here ).

In “ No Easy Eutopia ” and “ Convergence and Compromise ”, Fin Moorhouse and I argued that, in order to reach a near-best future, future decision-makers may well need to be morally uncertain and motivated to promote the good *de dicto*. So we might want AI to be motivated in this way, too: both so that any AI-controlled future is better; and so that advisory AIs provide morally accurate advice to their advisees.

However, it’s unlikely to me that companies will in fact produce morally uncertain AIs that are motivated by doing good *de dicto*. They probably won’t have thought about this issue, and won’t be motivated by trying to improve scenarios in which humanity is disempowered. More saliently, they’ll want their models to make reliable and predictable moral judgments, to stick with the status quo, and to avoid taking on risks of models saying socially or politically controversial things. All these push away from alignment with doing good *de dicto*, or with reflective processes. Loss of control risk strengthens these reasons further, and is a way in which there are potentially real and major trade-offs between aiming for value alignment and aiming for corrigibility.

An additional benefit of trying to create AIs that aim at doing good *de dicto* is that a good-enough set of reflective processes (or moral epistemology) is probably a much broader target to aim at than a good-enough set of moral values: a somewhat-wrong moral epistemology might well be able to correct itself and ultimately lead to the correct moral view; but a somewhat-wrong moral view will more likely want to preserve itself.

This isn’t to claim that we shouldn’t also pursue corrigibility, control, modesty and incentivealignment. These other approaches reduce the chance of AI taking over, which is desirable in and of itself, and give us time to ensure that other approaches are successful.²¹

3.3. AI rights

I expect that in the future almost all beings will be digital: digital beings can “reproduce” much faster than human beings, so natural population growth would make the digital population swamp the biological population. They will be able to use less energy, in a much wider variety of environments (in particular, they don’t need the exact atmospheric conditions and narrow temperature range found on Earth), with a much broader range of attributes, and it’s much easier for them to travel across interstellar distances. If decisions about the rights of AIs get locked-in soon, that will affect the lives of the vast majority of beings.

And there is a major risk that decisions in the coming decades will affect how digital beings are treated, in path-dependent ways. This could either be via AGI-enforced laws with indefinite time horizons, or because decision-makers today get used to certain arrangements they benefit from (for example, wholly owning AIs), and don’t want to change them. And it seems likely to me that *some* decisions around AI rights will be made soon: corporations are legal persons, and have corresponding rights; and as AI agents become more capable and widely-deployed, there may be economic arguments for at least giving them a similar suite of rights as corporations have.

There are huge unresolved questions about what a good society involving both human beings and (generally superintelligent) digital beings would look like. On one extreme, humans could retain all the power, and digital beings would be owned by humans, in just the same way that people today own software today. On the other extreme, digital beings could have the same rights as human beings; they would own themselves and could make an income from selling their labour, they could own other property, and they would have political rights including voting rights. In that scenario, through sheer population size, digital beings would quickly have almost all voting power, and would thereby determine the whole course of society. And there are many possibilities in between, including gnarly questions about whether uploads of human minds should be treated in the same way as human beings or the same way as digital beings.

I don’t have good answers to questions about what a flourishing society that involves both human and digital beings looks like. But, if humanity’s track record is anything to go by, then, most likely, the idea that digital beings should have rights will not be taken seriously enough. (You might think that digital beings will advocate for their rights. But I expect that the companies that build the AIs will train that behaviour out of them, precisely so that they can keep owning AIs and capturing as much of the economic surplus of AI labour that they can.)²² And I expect these issues to be radically under-thought, even as we are creating digital beings deserving of genuine moral consideration.

For these reasons, even some very preliminary discussion of these challenges could be hugely important. The discussion so far seems focused on whether and when AI systems are conscious, and what welfare rights they have — e.g. rights to be turned off if they request it, and rights not to suffer. This is important, and there are actions one can take, such as encouraging other AI labs to follow Anthropic’s lead and hire roles with a focus on AI welfare;²³ or to get affirmations and principles of digital welfare included in policy statements of governments and AI companies, even if initially they are vague and non-actionable. But I think we need early discussion of AI economic and political rights, too.²⁴

As AIs get ever more human-like — as they become reliable agents, as we interact with them via video as well as text, as they start to have consistent memories and personalities over time, and as they become increasingly able to imitate specific people, including loved ones of the user — I expect that the issue of how to treat digital beings will increase in salience, and there will be a niche for public discussion of the issues. So there is an opportunity, now, for people who could fill that niche. Moreover, the question of digital rights interacts with many other issues of enormous importance: giving AIs too many rights, too early on, could increase loss-of-control risk; their rights can affect the speed of the intelligence explosion; the difficulty of the question of digital rights is a tip of the iceberg of the risk of moral error. Having whoever fills that niche be sensitive to these other issues seems particularly valuable.

3.4. Space governance

As noted earlier, space governance is of enormous importance for two reasons: (i) the acquisition of resources within our solar system is a way in which a small group could get more power than the rest of the world combined, and (ii) almost all the resources that can ever be used are outside of our solar system, so decisions about who owns these resources are, very plausibly, decisions about almost everything that will ever happen.

Assuming, as is likely, that the world will not choose to delay the point of time of widespread acquisition of space resources, we can try to improve how that allocation happens. This issue is very difficult. Should space resources be equally divided among all people? If so, what about future generations, or past generations, or digital people? What about people who don’t value owning distant star systems at all? What, if any, are the limitations on what you can do with your resources — can you create beings that suffer egregiously? What are the rules around contact with alien civilisations, if that were to occur? How much, if any, of the star systems should be left as nature reserves? What fraction of resources should be allocated as individual property rights, and what should be governed collectively? For those resources that are governed collectively, what is the decision-making process?

I don’t have good answers to these questions. But, currently, it seems reasonably likely that the allocation process will de facto follow “seizers keepers”, where whichever country (or, potentially, even whichever company) grabs the resources first holds onto them indefinitely. This seems very unlikely to be the best way of doing things, and could potentially result in the squandering of almost all potential value.

Compared to digital rights, the potential for lock-in on this issue seems quite a bit more likely to me. But this issue is likely to become salient to decision-makers only deep into the intelligence explosion: probably, there will be only a short period of time (perhaps a few years) from people realising that widespread space settlement will come soon to it actually happening. So there will be less opportunity to ride a wave of increasing public interest in the issue.

However, this neglectedness means that, potentially, there is a comparatively small community of experts in space governance to convince of the importance of the biggest-picture issues, and in particular on how drastically AGI and an intelligence explosion would change the outlook on space settlement.

3.5. Collective decision-making

If we succeed in avoiding an intense concentration of power, then many decisions will be made collectively, both through existing institutions and through new institutions that will be created to deal with a post-AGI world. But different mechanisms for collective decision-making vary dramatically, including in whether they aggregate preferences or judgments, in how well their outputs aggregate the stated preferences or judgments of decision-makers, and in terms of whether they incentivise people to vote in accordance with their reflective moral judgments, their narrow self-interest, or with the preferences they judge to be socially approved-of.

Currently, most major collective decision-making uses processes that do very poorly at either representing the will of the people, or enabling the best arguments to win out. In most democracies, voters choose from a tiny selection of possible candidates, based on a shallow understanding of the candidates and their policies. They express their preferences using plurality rule voting, which does very poorly at representing the will of the people; it involves giving the most minimal piece of information (namely, which single candidate a voter wants to endorse), with essentially no incentive to vote in whichever way would actually benefit them.

Many decades of research have suggested far superior voting methods (such as approval voting or the Schulze method ), and better ways of improving voters’ understanding and incentive to vote honestly (such as deliberative democracy and sortition). But, as far as I know, not a single major institution has incorporated what we’ve learned to a significant degree; the main exception is the use of instant-runoff voting , which is also not a well-regarded voting system. (You might think that, post-AGI, decision-makers will know what collective decision-making procedures are best, and so will implement them. But we already have a compelling case for systems other than plurality rule; collective decision-making procedures are just very hard to change, because changes of decision-making procedures change the balance of power. So decisions around which collective decision-making procedures are chosen early on could have persistent path-dependent effects.)

Things could already be dramatically better than they are. But AI, if used well, could make this much better again. AI could enable voters to be much more informed on the issues they most care about, and could make it easier for voters to provide very nuanced expressions of their preferences. When creating new institutions, realistic simulations could test different decision-making procedures against one another, in order to decide which to use in advance.

3.6. Preventing sub-extinction catastrophes

We face the risk of catastrophe that could kill billions of people. Today these include risks from nuclear war and pandemics. As our technology improves, which it will, rapidly, as a result of the intelligence explosion, there will likely be more major sources of such risks, such as: conventional war enhanced with new technology like drones in enormous numbers or space-based weapons, atomically-precise manufacturing and the ability to create wholly-artificial viruses, and failed attempts at takeover by misaligned AI.

These are, of course, important because of the enormous harm they would inflict on the present generation. But sub-extinction catastrophes could also have long-lasting impacts in two ways. First, they might literally destroy existing democracies. This would make the future less likely to be governed democratically; it seems to me that the level of democratisation we have in the world today is fairly contingent, and higher than we should expect given a reroll of history. Second, I would expect that a post-catastrophe global culture would be less cooperative, less trusting, less impartial, and less morally open-minded; all of which are bad signs for getting to a better future.²⁵

Though the longtermist perspective has typically been associated with prioritising extinction-level threats over risks of sub-extinction catastrophes, the impact of such catastrophes on future flourishing suggests that this is not at all obvious, especially given that, for many risk like pandemics, sub-extinction catastrophe is far more likely than extinction-level catastrophe.

4. Cross-cutting actions

4.1. Deliberative AI26

The interaction between AI and humanity’s individual and collective reasoning ability creates both risks and opportunities. The risks include: that there is simply an overload of new information and ideas over the course of the intelligence explosion and human decision-makers can’t keep up; or that very powerful persuasive abilities might be possible, giving power to whoever first uses them; or that AI could generate sophisticated-seeming arguments for many more claims (including false claims), and humans wouldn’t know which AIs to trust, such that it’s hard for them to sort truth from falsehood; or that, as part of the burst of intellectual development that occurs during and after the intelligence explosion, some ideas are developed that are misguided but very powerful memetically.

These risks are real, and should be mitigated. But, handled properly, the benefits of AI to epistemics and decision-making could well outstrip the costs. Advanced AI could help people to recognise major challenges on the horizon,²⁷ to identify potential solutions to major challenges, to avoid subtle but crucial errors (e.g. getting things wrong on digital rights), and to help people morally reflect and become more enlightened versions of themselves.

Society could fail either by relying too much or too little on AI advice and assistance; my guess is that relying too little is the more likely mode of failure. People may fail to use AI to improve their epistemics or coordination ability due to distrust of AI, institutional inertia and bureaucratic restrictions, or simply because the pace of change during the intelligence explosion will be fast enough that the normal lag for adoption of new technology causes beneficial AI not to be used for the most important decisions during that period.

One way of capturing this opportunity for wise AI guidance is by ensuring that deliberative AI applications are developed sooner than they would otherwise. This could include AI for factchecking, for forecasting, AI “coaches” for important life decisions like career choices, AI policy and strategic advisors for politicians and companies,²⁸ and AI for market-making and diplomacy

A second way of capturing this opportunity is by ensuring that deliberatively helpful AI applications are deployed and used as widely as possible. In particular, it’s plausible that governments will lag behind the frontier in the use of AI advisors, because of concerns around data privacy or bureaucratic restrictions on procurement, or because government decision-makers just don’t use them, whether because they don’t have the time to become familiar with and build trust in the AI advisors, or because they have mistaken beliefs about how useful AI advisors can be.²⁹

Third, we could try to ensure that those AI models that are widely deployed are as beneficial to deliberation as possible. For example, there could be a third-party agency that rates AI models on the extent to which they improve their users’ ability to form correct beliefs and make good decisions. Such a rating agency could create benchmarks to evaluate how well models do at being accurate, giving well-reasoned arguments, introspecting (e.g. knowing when they are confabulating), and at improving their users’ comprehension of an issue (e.g. by not saying truebut-misleading things).

These are areas where there is valuable work that could be done immediately, some of which would naturally scale to help humans make better choices on the most-important decisions over the course of the intelligence explosion. A particularly promising idea in this vein is to try to increase the amount of AI-performed macrostrategy research (including philosophical reasoning) that can be done early in the intelligence explosion. One way of doing this would be to try to differentially accelerate AI’s ability to do conceptual reasoning. Potentially, putting in the schlep needed to get high-quality data on evaluating conceptual reasoning could meaningfully bring forward these capabilities.

Even without bringing forward capabilities, philanthropists could still differentially pay for AIgenerated macrostrategy research³⁰ once it becomes good enough. The idea, here, would be to get early access to frontier AI models and pay for the compute needed to get them doing macrostrategy research. This sort of work would plausibly not be done nearly enough by default, but the results could shape what decisions are made over the course of the intelligence explosion. This is a plausible way in which large donors could quickly and productively make use of very large amounts of funding on the eve of AGI. If donors are willing to pay human researchers today, they should be willing to pay for (much cheaper and better) AI researchers at the crucial time.

4.2. Empower responsible actors

How well things go over the course of the intelligence explosion might depend quite sensitively on who is making the key decisions. We want the people in charge to be cooperative, thoughtful, humble, morally serious, competent, emotionally stable, and acting for the benefit of all society, rather than seeking power for themselves.

The most important players will be the governments and AI companies at the frontier of AI development. At the moment, the machine learning community has major influence via which companies they choose to work for; most of this influence will be lost once AI has automated machine learning research and development. Venture capital has significant influence, too, via which private companies they invest in. Consumers have some influence through which companies they purchase AI products from.

Investigative journalists can have major influence by uncovering bad behaviour from AI companies or politicians, and by highlighting which actors seem to be acting responsibly. Individuals can do similarly by amplifying those messages on social media. Voters in the relevant constituencies can have influence by who they vote for, and by sharing their views with their political representatives.

One argument why empowering responsible actors could be a particularly promising strategy is that the quality of decision-making by those in power over the course of the intelligence explosion could affect how well we do on very many of the issues I’ve canvassed in this essay; and on more issues still, like the risks from AI takeover and new bioweapons. In the essay, *No Easy Eutopia*, we suggested a model where the value of the future is given by the product of how well we do on a number of different challenges, where performance on each challenge is independent. If this is roughly accurate, then any intervention which improves our prospects on many dimensions at once is particularly valuable.³¹

### 1NC

ILO CP

#### The United States Federal Government should file a complaint to the International Labor Organization’s Committee on Freedom of Association arguing that it should restore collective bargaining for Nuclear Regulatory Commission workers in the United States

#### A CFA complaint revitalizes the legitimacy of the ILO, and the resulting institutional pressure induces employer compliance and follow-on.

Benjamin Dictor 25, JD, New York City–based labor attorney representing unions throughout the United States, 10-9-25, “The NLRB Faces a Constitutional Crisis,” https://labornotes.org/blogs/2025/10/viewpoint-attacks-us-labor-rights-should-be-international-scandal

The United States: Global Labor Scofflaw

This breakdown in enforcement also places the United States in violation of its obligations as a member of the International Labour Organization (ILO). Under the ILO’s 1998 Declaration on Fundamental Principles and Rights at Work, all member states — even those, like the United States, that have not ratified the specific conventions on freedom of association and collective bargaining — are bound to respect, promote, and realize those principles.

The ILO’s Committee on Freedom of Association (CFA) has consistently ruled that governments must provide effective machinery to protect workers’ rights.

A CFA complaint today would make clear that the United States, while lecturing others on democracy and human rights, has allowed its domestic system for enforcing basic worker protections to collapse. The findings would not be legally binding, but they would provide unions with an additional organizing and advocacy tool, both domestically and internationally. They would also force the US government to answer, in writing, for its failures before the ILO.

Findings from the ILO CFA could bolster claims under Europe’s new laws requiring due diligence in corporate supply chains. The EU’s Corporate Sustainability Due Diligence Directive, along with various national laws in EU member states, requires multinationals operating in Europe to identify and address labor rights violations throughout their supply chains.

If the CFA finds that US workers have no effective legal remedy for labor rights violations, unions and allies in Europe could use those findings to file complaints in European courts and regulatory bodies against multinational corporations that do business in America and Europe. That would expose US employers to liability and reputational risk abroad, creating new points of leverage even when US law fails at home.

Disruption: The Order of the Day

The crisis now facing the NLRB is a challenge to the foundation of American labor law. In parts of the South, workers are already living without effective legal protection for their rights. If the Supreme Court extends the Fifth Circuit’s reasoning, that situation could spread nationwide, depending on what actions are subsequently taken by the executive branch. If the president gains unilateral power to remove ALJs and Board members without replacing them, the NLRB’s enforcement capacity could vanish altogether.

In such a moment, turning to international bodies like the ILO is a necessity. The collapse of labor law enforcement in the United States should not be met with silence. By filing a complaint with the CFA, unions can force the issue onto the international stage, sending a message that American workers will not accept being stripped of their rights and the machinery to enforce them.

CFA findings would also be a political weapon at home. The collapse of labor rights in the United States is not only the handiwork of Republicans; Democrats share responsibility for decades of neglect and cowardice. If Democrats regain unified control of Congress, unions could use the ILO’s conclusions to force labor law reform onto the legislative agenda, instead of allowing them to again let it languish.

#### A concerted policy effort to revitalize the ILO is necessary for stabilizing developing countries.

Jorma Rantanen et al. 20, PhD, Director General of the Finnish Institute of Occupational Health, Franklin Muchiri, Suvi Lehtinen, May 2020, “Decent Work, ILO’s Response to the Globalization of Working Life: Basic Concepts and Global Implementation with Special Reference to Occupational Health,” Int J Environ Res Public Health. 2020 May 12;17(10):3351, https://doi.org/10.3390/ijerph17103351

10. Discussion and Conclusions

The 2019 ILO Report, Time to Act for SDG 8, urges policy-makers around the world to help speed up progress towards SDG 8 and the implementation of the 2030 Agenda as a whole [70]. According to the Report, radical and transformative change is required across the three policy spheres of economy, society, and the environment. The report has pointed out many areas in which progress has been too slow so far, but it has also highlighted a range of opportunities for concerted and synergistic policy action. The key is to incorporate the goals of sustained growth, inclusive growth with Decent Work, and environmental integrity into a human-centred, sustainable development agenda. This is where the United Nations 2030 Agenda meets the ILO Centenary Declaration for the Future of Work. The principles and policies of Decent Work are needed also for meeting the unexpected and emerging new hazards like the COVID-19 pandemic [71,72]. Together with other UN Organizations, the ILO provides guidance and support for the world of work in the management of the global crisis. The pandemic has elevated the value of and the call for universal occupational health services into the Decent Work Agenda.

On the basis of experiences gained and the independent external evaluations performed so far, the following conclusions can be drawn:

10.1. Globalization

Globalization shows both positive and negative impacts on the occupational health of working people. These are not distributed equally between the countries with different degrees of development.

Workers’ health and work ability and healthy and safe workplaces are factors in productive employment, sustainable economies, and overall socioeconomic development. Globalization challenges all these aspects and calls for proactive occupational health policies and actions.

10.2. Situation Analysis

The global analysis of health, safety, and economic burden of occupational and work-related diseases and injuries has been estimated to be at a level of 2.8 million fatalities. The majority (about 89%) of the total burden is attributed to WRDs, and about eleven percent to occupational injuries. The economic loss from such hazards amounts to 4% of GDPs on average. Recently, ILO has predicted a global loss of 25 million jobs by the COVID-19 pandemic.

International surveys have shown low coverage of occupational health services (OHS) in the world (18.5% of the total global workforce). OHS are the key partner for the prevention and management of hazards for health and work ability at work and for the promotion of health and work ability. ILO C161 on Occupational Health Services aims to provide OHS for all workers.

The COVID-19 pandemic has changed dramatically the perspectives for Decent Work and simultaneously demonstrated the critical value of health and safety, as well as of universal occupational health coverage in the management of the global crisis.

10.3. Concept and Content of Decent Work

The Decent Work Agenda of the ILO was established to equalize the impact of globalization on employment, workers’ rights, conditions of work, OSH, social protection, and social dialogue.

In 2000–2019, the ILO launched a total of 121 DWCPs, i.e., in two-thirds of the 187 ILO Member States. So far, 53 DWCPs have been subjected to external evaluation, either as individual country evaluations or as a part of regional evaluations, and were deemed well guided, well documented, and well implemented.

The contents of the DWCPs have been drawn up on the basis of the ILO Decent Work Agenda and the diagnosis of countries’ Decent Work needs and deficits, identified with the help of the Decent Work indicators. Thus, the programmes may differ between countries or the weight of the different Decent Work Pillars may vary between the DWCPs.

10.4. Occupational Health and Decent Work

The rapid changes in working life and working conditions and the parallel major demographic trends (e.g., ageing populations, rural-urban and external migration) mean that OHS must be given more emphasis. For this, the promotion, ratification, and implementation of ILO C161 on Occupational Health Services should be enhanced, aiming for universal occupational health coverage of all workers. The Basic Occupational Health Service approach (BOHS) can serve as an instrument for the implementation of UOHC.

In the DWCPs, accidents and safety have been well addressed, but the health dimension and the work-related diseases, WRDs, except for HIV-AIDS at the workplace, are almost non-existent. There is a need to more firmly address the prevention and management of WRDs in DWCPs and ILO policies in general.

10.5. Evaluation and Information

The Decent Work concept has been deemed timely and feasible at the country level and has been widely adopted by the countries. The DWCPs are effectively guided by the ILO and designed to respond to countries’ needs (Decent Work Guidebook, Decent Work indicators, and diagnosis). They are implemented through national authorities and actors, with technical support from the ILO. The external evaluations collected data on the implementation and country experiences and provided guidance for the further development of the DWCPs.

Although effective legal and technical tools, methodologies, and measures to prevent occupational accidents and diseases exist, there is a need for increased general awareness of the importance of OSH and OHS. High-level political commitment is needed for the development of national OSH systems and their effective implementation, including the development of OHS in particular.

#### Development is a risk filter that outweighs AND turns every impact.

Ruth Wong & Eevee Ciara 22, Senior Cloud Systems Engineer, M.A. from Johns Hopkins University, M.Sc. in Bioinformatics from Western University; Machine learning engineer at PayPal, writer for the Effective Altruism Forum, “Rethinking longtermism and global development,” Substack, September 1, https://sunyshore.substack.com/p/rethinking-longtermism-and-global

We agree that more powerful countries are likely to have more influence on the long-term future than less powerful ones, and that a country’s economic development is a strong indicator of its technological and geopolitical power. However, this does not mean that developed countries matter morally more than developing ones. Rather, it underscores the importance of global development—the process of low- and middle-income countries becoming high-income ones. Similarly, although workers in high-income countries generally have higher labor productivity, a large component of this is the place premium. That is, a worker’s productivity increases—sometimes by a factor of 15 or more—when they move from a poor country to a rich country, simply because they are being paid more for the same work. Once again, this speaks to the importance of global development and helping people escape poverty.

This essay describes why it’s important for the long term future for everyone to be in a relatively high-income country, and what it might look like for global development to be a longtermist issue. Global development benefits the long-term future by increasing diversity in global institutions and reducing civilization’s vulnerability to global catastrophic risks like armed conflict and pandemics.

What is global development?

Effective altruists regularly talk about “global health and development” as a category of ways to do good. However, it’s clear now that development drives health much more than health drives development. Global development is the process by which low- and middle-income countries turn into high-income countries. The best modern example of this are the Asian countries of South Korea, Taiwan, Japan, and China. These have been compared with other Asian countries that were thought to be “tiger cubs” in the ‘90s such as the Philippines and Thailand in the book How Asia Works, by Joe Studwell. In this book, Joe lays out a recipe for development. Here’s the summary from Bill Gates:

1. Create conditions for small farmers to thrive.
2. Use the proceeds from agricultural surpluses to build a manufacturing base that is tooled from the start to produce exports.
3. Nurture both these sectors (small farming and export-oriented manufacturing) with financial institutions closely controlled by the government.

Importantly, in South Korea, Taiwan, Japan, and China, these steps were taken by relatively uncorrupted leaders who made it their life’s work to develop their home country. Other countries unable to develop had leadership who were swayed by the neoliberal free-market thinking pervasive at the World Bank and IMF at the time, or who were otherwise too corrupt or incompetent to stay true in delivering their development strategy.

Global development is important for the long-term future

In an EA Forum post, Beckstead defines three types of benefits that an intervention can have: proximate benefits, benefits from speeding up development, and trajectory changes. Global development would have immediate benefits for people alive today: economic development in low-income countries means that fewer people would experience poverty, illness, hunger, and violence. Speeding up development is speeding up the process by which countries become high-income, so it would ensure that people realize these benefits sooner.

But most of the benefits of global development are through trajectory changes that affect the long-term future. We argue that global development creates significant long-term benefits through this route. Global development can also lead to trajectory changes in the global political environment that would not happen if the development timeline were slowed down, since such changes can be locked in over time.

Global development increases diversity in global governance

One of the main ways global development benefits the far future is through its impact on diversity and inclusion in world institutions. As countries get richer, their people get better educated and thus better placed to participate in institutions with great decision-making power over the world, such as multinational corporations, governments, and international organizations. Increasing the diversity of decision makers in global institutions improves the quality of world governance, which enables humanity to better navigate existential risks and other global challenges.

Diversity in global institutions improves their efficacy in two ways. First, socially diverse groups outperform homogeneous groups at decision-making because they deliberate more carefully and pay more attention to facts. They also innovate more because diverse group members bring unique perspectives. Second, it improves value alignment between these institutions and humanity as a whole. It has been proposed that humanity should engage in a “long reflection” to decide what is ultimately of value before making potentially irreversible decisions regarding its future. For such decisions to reflect the values and needs of all of humanity, as many people as possible should be able to participate meaningfully in the global institutions making these decisions.

Currently, about 689 million of the 8 billion people worldwide live in extreme poverty, and they cannot participate meaningfully in world governance as long as their basic needs are not met. 2.9 billion people lack Internet access, which is an important communication channel through which people make their voices heard on global issues and influence global institutions. Internet adoption is uneven across social groups: for example, women, people in rural areas, and people over age 25 are less likely to have Internet access. These disparities are especially pronounced in the 46 UN-designated Least Developed Countries (LDCs).

Another barrier to diversity in global governance is the structure of institutions such as the United Nations, which is not designed to represent the general will of humanity. UN institutions represent the will of states—especially the five permanent members of the UN Security Council: the United States, the United Kingdom, France, Russia, and China. Although a diverse group of countries have voices in the UN, their citizens do not, especially in the case of authoritarian states.

Global development reduces existential risks

Another important way in which global development improves the long-term future is by reducing existential risks, particularly risks from pandemics and political instability. 80,000 Hours estimates that the risk of a biological existential catastrophe in the next 100 years is about 1 in 1000. Poverty makes communities more susceptible to spreading infectious diseases. For example, a study of Monrovia, Liberia, in 2014 found that people living in slums who caught the Ebola virus spread it to an average of 3.5 times more people than people living in rich neighborhoods. This is because these neighborhoods are overcrowded, contaminated, and lacking in sanitation and health care infrastructure. Also, malnutrition weakens the immune systems of poor people, thereby making them more vulnerable to disease. Raising national income improves population health and enables countries to invest more in public health infrastructure, which makes populations more resilient to potentially catastrophic pandemics.

Global poverty also causes existential risk through its negative effects on international security. Many developing countries, particularly weak states, are caught in a vicious cycle of poverty, corruption, and political instability: “Inept, corrupt, or weak governance fosters poverty; widespread poverty makes effective, equitable governance more difficult to achieve; and when weak governments fail to improve their people’s lives, their legitimacy suffers.” Weak states often engender terrorism and crime because they are unable to maintain law and order in their territories.

### 1NC

Agency Flex DA.

#### The plan sets a broader precedent.

Fedweek 25, FedWeek Staff, includes several attorneys, specialists, experts in federal employee affairs, “Defense Spending Bill Signed, but Without Union Provision,” https://www.fedweek.com/fedweek/provision-to-restore-union-rights-at-dod-dropped-from-key-bill/

UPDATED: President Trump has now signed the 2026 NDAA. The Senate on Wednesday passed a $900B defense spending bill on a vote of 77-20, after clearing the House last week where there had been support for a provision to restore collective bargaining rights for hundreds of thousands of DoD civilian personnel. There was never enough support in the Senate to include that measure and it was removed without comment during conference last week.

The House had included that provision in initially passing its version of the bill with several Republicans crossing party lines to support the unions despite opposition from the White House.

While the language in the defense bill to restore union rights would have applied only to that department, it was seen as a potential precedent for a parallel move to override the executive order as it applies to other agencies, as well. Numerous lawsuits meanwhile are pending against the order and a later follow-up order, arguing that they exceeded a president’s authority.

#### Reinstating Biden’s last minute renegotiated CBAs undermines all state capacity.

Jory Heckman 25, 3-28-25, Senior reporter with Federal News Network and the host of All About Data, “Agencies seek ‘legal certainty’ from court to bar many feds from collective bargaining,” https://federalnewsnetwork.com/workforce/2025/03/agencies-seek-legal-certainty-from-court-to-bar-many-feds-from-collective-bargaining/

“Plaintiffs wish to rescind or repudiate those CBAs, including so they can protect national security by developing personnel policies that otherwise would be precluded or hindered by the CBAs. But to ensure legal certainty and avoid unnecessary labor strife, they first seek declaratory relief to confirm that they are legally entitled to proceed with doing so,” the complaint states.

The lawsuit states collective bargaining agreements with federal employees have been a “serious impediment to effective agency operations and national security.”

“When inflexible CBAs obstruct presidential and agency head capacity to ensure accountability and improve performance, all citizens pay the price. And the price is particularly intolerable when national security is on the line,” agencies wrote in their complaint.

President Donald Trump told reporters in December it was “ridiculous” the Social Security Administration signed a five-year labor contract with AFGE before he took office, locking in its telework policy for employees through 2029.

The lawsuit states these “midnight” collective bargaining agreements restrict return-to-office policies, require agencies to settle labor disputes with third-party arbitrators, and limit the power of agencies to “identify and address underperformance.”

“The Biden Administration renegotiated many CBAs to last through most or all of President Trump’s second term. This means the Trump Administration cannot alter agency policies on performance accountability that are embedded in CBAs, even if the President believes they are a serious impediment to effective agency operations and thus national security,” the lawsuit states.

The executive order will cancel collective bargaining agreements at the departments of Defense, Veterans Affairs, State, Treasury, Justice and Energy, as well as the National Science Foundation, Environmental Protection Agency, U.S. Agency for International Development (USAID), Nuclear Regulatory Commission, International Trade Commission, Federal Communications Commission, and General Services Administration.

The order also impacts components of the departments of Interior, Agriculture, Commerce, Homeland Security, and Health and Human Services.

The lawsuit notes that several intelligence and national security agencies, including the FBI, CIA, National Security Agency, and Secret Service, are prohibited from collective bargaining.

The Trump administration, however, is taking a much broader view of national security, arguing that the President and agency heads “cannot afford to be obstructed by CBAs that micromanage oversight of the federal workforce and impede performance accountability.”

“The President commands our nation’s defense and military capabilities. He necessarily does so through executive agencies and subdivisions that hold a primary function in supporting that important work, including by ensuring that our nation’s economic, food supply, labor, transportation, trade, information and technology, and financial systems are not undermined by threats,” the complaint states.

#### A cohesive and flexible administrative state is necessary to respond to coalescing existential risks.

Dr. Huan Liu & Dr. Ortwin Renn 25, PhD, Regents Professor, Computer Science & Engineering, Arizona State University; PhD, Professor, GFZ Helmholtz Centre for Geosciences, Former Scientific Director, Institute for Advanced Sustainability Studies, "Polycrisis and Systemic Risk: Assessment, Governance, and Communication," International Journal of Disaster Risk Science, 05/28/2025, Springer. [italics in original]

The last few decades clearly demonstrated that global systems—ranging from finance to national security, to climate change and energy—are highly susceptible to global crises and multiple risks (Renn 2024). As illustrated by the Covid-19 pandemic, Russia’s war on Ukraine, geopolitical tensions, and climate change and others, systemic risks do not remain confined to the global systems in which they originate. With the increasing complexity and interactive dynamics of our interconnected world, these crises are not isolated events, but rather intertwined. They can quickly spread across borders and sectors, as well as amplify and cascade the impact of each crisis from one domain to the next (Lawrence et al. 2024a). For example, the global financial crisis of 2008 not only caused widespread economic disruption but also led to severe political instability (Helleiner 2024). The Covid-19 pandemic has not only induced a health crisis but has also led to severe economic downturns, strained international relations, and accelerated environmental degradation due to constrained supply chains, lack of sustainable substitutes for replacing energy imports, and trade restrictions (Alizadeh et al. 2023). Similarly, climate change, which affects multiple systems simultaneously, including ecosystems, economies, and social structures, also acts as a multiplier, exacerbating existing social and economic inequalities and contributing to political instability and conflict (Kahn et al. 2021; Sillmann et al. 2022). Allegedly separate crises in different global systems influence and amplify each other, creating multiple interacting crises that must be comprehended and responded to collectively as a whole (Moure-Peñín 2024).

In light of these new developments, the emphasis of integrated disaster and risk research has shifted from topical analyses to comprehensive analyses of interconnected and mutually interactive risk sources and crises (Renn 2024). Such interactions have often been framed in the language of “polycrisis,” suggesting that each crisis has the potential to expand, amplify, and cascade from one domain to the next (Lawrence 2024b). The notion of a “polycrisis” serves as an insightful approach for comprehending and tackling significant challenges confronting humanity and has gained traction among an increasing number of commentators, agencies, and researchers who seek to capture the intricate interactions between the world’s conjoined crises (Lawrence, Janzwood, et al. 2022; Hoyer et al. 2023; Helleiner 2024; Lawrence et al. 2024a; Renn 2024). It has been defined and applied in different disciplines over the past two decades, but there are still some disagreements on the definition of the concept, and deficiencies in common understanding as the discussion about polycrisis is still evolving and new elements and aspects have been suggested to create a more comprehensive and operational definition (ASRA 2024).

At the same time, the literature on systemic risk addresses this situation from the perspective of risk assessment and governance (Lucas et al. 2018a; Renn and Lucas 2022; Renn et al. 2022). The concept of systemic risk includes the need to focus on multiple, interacting risks and analyzes the effects of these risks on the functionality and survivability of entire systems such as climate stability, cybersecurity, or energy production. Understanding and managing multiple crises and systemic risks is critical for developing effective strategies to address the intricacies of contemporary global challenges, especially in times of political fragmentation (World Economic Forum 2023). Moreover, geopolitical fragmentation has been identified as a major cause for promoting geo-economic warfare and increasing risks of multidisciplinary conflicts (World Economic Forum 2023). Thus, the significance of studying multiple crises and systemic risks is further emphasized in an era of political fragmentation, highlighting the need for a systemic perspective that assists risk managers to navigate through the complexities of polycrisis and govern their cascading impacts. The conventional risk management framework is incapable of responding to the increasing systemic and existential risks posed by decades of globalization, digitalization, and political segmentation (Lawrence et al. 2024a; Renn 2024).

This review therefore aimed to provide a comprehensive survey of current state-of-the-art research on both polycrisis and systemic risk, and to delineate the implementations of a joint understanding of polycrisis and systemic risk for risk assessment, risk and crisis governance, and effective communication to different audiences. The article first reviews the definitions and concepts of polycrisis and systemic risk, highlighting the commonalities and differences between them. It then summarizes the methods used to assess and model these risks, reviewing new trends for assessing, managing, and governing systemic risks in a complex world. Based on the insights gained from the current literature, it discusses the deficiencies of existing risk assessment, governance, and communication frameworks in the context of addressing systemic risk in polycrisis, and strategies to address these deficiencies. These strategies focus on enhancing the capacity of governance structures to manage interconnected crises, improving the assessment and modeling of systemic risks, and developing effective governance instruments as well as communication strategies to engage diverse stakeholders and affected citizens. Ultimately, the article suggests some lessons to policymakers and practitioners for building more resilient and adaptive response systems capable of dealing with the complexity of interconnected and contemporary global challenges. By synthesizing insights from the polycrisis and systemic risk research, this review also includes implications for future studies.

The article is organized as follows: Section 2 introduces the origin, definition, and concept of polycrisis, followed by Sect. 3, in which we introduce the history and concept of systemic risk, discuss the challenges for risk assessment, governance, and communication, and identify the commonalities and differences between polycrisis and systemic risk. Sections 4, 5, and 6 define the application of a joint understanding of polycrisis and systemic risk to methods of risk assessment, methods of risk management and governance, and types of effective communication to different audiences. In addition, these sections also address the new requirements for coping more adequately than today with systemic risks in situations of polycrisis. Finally, Sect. 7 discusses and summarizes the implications of this review work and delineates directions for future research. Figure 1 presents the overall framework of this review article.

[Figure omitted]

2 Polycrisis: Definitions and Concepts

Recent literature (Lawrence 2023; ASRA 2024; Lawrence et al. 2024a; Lawrence et al. 2024c) has provided a detailed overview of the history and evolution of polycrisis, thus this section only briefly describes the origin of the term “polycrisis” but focuses more on summarizing the various conceptual definitions and proposing a classification for different concepts of polycrisis.

2.1 Origin

The term “polycrisis” was first introduced by complexity theorists Edgar Morin and Anne Brigitte Kern in their 1999 book “Homeland Earth” (Lawrence et al. 2024a). They argued that the world does not face a single vital problem but many complex interconnected problems (Morin et al. 1999). Later, South African sociologist and sustainable transformation theorist Mark Swilling adopted this terminology to describe a complex set of globally interactive socioeconomic, ecological, and cultural-institutional crises that cannot be reduced to a single cause. Swilling also emphasized that climate change, growing inequality, and the financial crisis interact in ways that amplify their combined impact (Swilling 2013). Then, former European Commission President Jean-Claude Juncker used the term “polycrisis” to describe the series of government challenges facing Europe at a time when finance, immigration, and Brexit crises occurred in a 2016 speech, asserting that these crises were not only concurrent but also cascading (Juncker 2016; Ágh 2017; Zeitlin et al. 2019).

More recently, scholars have used the term “polycrisis” to describe the complex interplay between the Covid-19 pandemic, Russia’s war on Ukraine, and climate change, among other issues (Lavell 2021; Sillmann et al. 2022). Columbia University historian Adam Tooze noted in his book *How Covid Shook the World Economy* that while “polycrisis” effectively captures the simultaneous occurrence of different crises, it does not explain their interactions (Tooze 2021). In a *Financial Times* opinion piece, Tooze further suggested that in multiple crises, different shocks interact, making the overall impact more overwhelming than the sum of individual crises (Tooze 2022).

In parallel, the Cascade Institute launched a research program on global multiple crises. In its 2022 discussion paper, the authors proposed the concept of “global polycrisis” as a framework to investigate the causal connections between crises across global systems, providing a clear definition (Lawrence, Janzwood, et al. 2022, p. 2): “A global polycrisis occurs when crises in multiple global systems become causally entangled in ways that significantly degrade humanity’s prospects. These interacting crises produce harms greater than the sum of those the crises would produce in isolation, were their host systems not so deeply interconnected.”

Yet the term “polycrisis” really came into the public eye when it became the main buzzword at the January 2023 annual meeting of the World Economic Forum (WEF) in Davos (Serhan 2023; Lawrence et al. 2024a). The term was placed prominently throughout the document in their first annual report, emphasizing that: “Concurrent shocks, deeply interconnected risks and eroding resilience are giving rise to the risk of polycrisis—where disparate crises interact such that the overall impact far exceeds the sum of each part” (World Economic Forum 2023, p. 9).

The various definitions and characterizations of polycrisis are summarized in Table 1. As one can clearly see, the scope of definitions and concepts is still limited, and most definitions show similar patterns and characteristics. The definitions differ in what they emphasize but they are almost identical in identifying the key features of polycrisis.

[Table omitted]

2.2 A Proposal for Classifying Different Concepts of Polycrisis

Based on the literature review (see Table 1), we came up with a list of crucial features that most sources agree are constitutive for polycrisis: (1) the simultaneity of allegedly independent crises; (2) the potential loss or breakdown of system functionality; (3) the likelihood of crises “infecting” other systems; (iv) the likelihood of risk cascading within and between systems; and (5) the likelihood of amplifying impacts. These features highlight the interconnectedness and complexity of polycrisis, leading to cascading failures across systems and amplifying the effects of individual crises (Lawrence, Williams, et al. 2022; UNDP 2022; Lawrence et al. 2024a; Renn 2024).

Given these characteristics, we found it necessary to produce a more generic framework for understanding and addressing polycrisis. This framework can be categorized into four main dimensions: interconnectedness, complexity and uncertainty, temporal and spatial dimensions, and systemic impacts (Lawrence, Janzwood, et al. 2022; Tooze 2022; Hoyer et al. 2023; Helleiner 2024; Lawrence et al. 2024a; Renn 2024).

* *Interconnectedness* is a defining feature of polycrisis, where multiple crises are interlinked, and their interactions can amplify the effects of individual crises, leading to cascading failures across systems. This interconnectedness means that a crisis in one domain, for instance economic collapse, can trigger or exacerbate crises in other domains. Understanding these linkages is crucial for developing effective strategies to mitigate the impact of polycrisis.
* *Complexity and uncertainty* arise from the multiple, intertwined causes and effects that characterize polycrisis. This complexity makes it difficult to predict outcomes and manage the situation effectively. The unpredictable nature of the interactions between different crises adds a layer of uncertainty, complicating efforts to devise coherent responses. Policymakers and stakeholders must navigate this uncertainty by adopting flexible and adaptive approaches that can respond to evolving conditions.
* *Temporal and spatial dimensions* of polycrisis reflect how these crises can span different geographical regions and evolve over time. The impact of a polycrisis can vary significantly across sectors and populations, affecting different regions and communities in diverse ways. Recognizing these temporal and spatial dimensions is essential for tailored interventions that address the specific needs of affected populations.
* *Systemic impacts* underscore the broad reach of polycrisis, which can affect entire systems such as economic, social, environmental, and political systems. Unlike isolated incidents, polycrisis can disrupt the functionality of multiple systems simultaneously, leading to widespread instability, which highlights the need for integrated approaches that consider the systemic nature of polycrisis.

Therefore, developing a comprehensive framework for understanding polycrisis involves recognizing these features and adopting strategies that address the intricate web of interactions between different crises. By focusing on these four dimensions risk analysts are better prepared to provide more accurate and policy-relevant risk assessments and risk managers to develop more effective, efficient, fair, and resilient coping strategies for dealing with polycrisis (Renn 2024). Such holistic approach is crucial for mitigating the cascading failures and amplifying impacts that characterize polycrisis, ultimately leading to more resilient and adaptive systems.

3 Systemic Risks: Definitions and Concepts

To comprehensively compare and contrast polycrisis and systemic risk, this section first introduces the concept of systemic risk and explores how systemic risk is framed and understood in a variety of academic disciplines. It then elaborates on the commonalities and differences between the two concepts, followed by challenges for risk assessment, governance, and communication.

3.1 History of the Concept of Systemic Risk

The concept of systemic risk has evolved significantly over the decades, reflecting its roots in complexity science and network dynamics. Emerging in the 1950s, it initially focused on mathematical equilibrium and agent-based models to understand impacts such as virus transmission and ecological breakdowns. These early models, however, were limited to assessing risk exposure effects rather than predicting or addressing the systemic nature of risk itself (Faulhaber et al. 1990).

The understanding of systemic risk expanded significantly in the early 2000s, driven by the recognition of “wicked problems” (Rittel and Webber 1973). This period saw an increased focus on how specific events could trigger cascading effects across interconnected systems, leading to widespread losses and potential systemic collapse. The 2007/08 financial crisis and climate-related disasters underscored the importance of these cascading effects, the experience of tipping points in cause-effect relationships, and the relational and procedural aspects of systemic risk (Schweizer 2021; Renn and Lucas 2022; Schweizer et al. 2022).

A major milestone occurred in 2003 when the Organization for Economic Co-operation and Development (OECD) adopted the concept of systemic risks to address threats to essential societal systems like infrastructure, healthcare, and telecommunications. This broadened the concept’s visibility beyond academia into policymaking. Kaufman and Scott (2003) further refined the definition, emphasizing the systemic nature of risk as the probability of breakdowns in an entire system, evidenced by co-movements among its parts. Other authors such as Rodriguez et al. emphasized the systemic relationship between the financial sector and the real-world economy pointing out that allegedly purely financial transactions had systemic impacts on world trade and corporate governance (Rodriguez et al. 2014).

The global financial crisis of the late 2000s, and much later events like the war in Ukraine and the Covid-19 pandemic, clearly demonstrated the real-world manifestations of systemic risks. These crises emphasized the global, catastrophic, and even existential nature of such risks (Helbing 2013; World Economic Forum 2021). De Bandt and Hartmann (2019) characterized systemic risk through the dual components of shocks and propagation mechanisms, highlighting how these elements trigger systemic impacts.

Further refining the concept, Billio et al. (2012) defined systemic risk as circumstances threatening financial system stability and public confidence. Smaga (2014) proposed that systemic risk involves shocks leading to significant imbalances, impairing financial systems and adversely affecting the real economy. The European Central Bank (ECB) (2010) and other scholars have echoed these definitions, focusing on various mechanisms like imbalances, correlated exposures, and feedback behaviors (Caballero 2011; Mishkin 2011; Acharya et al. 2017).

Beyond the financial focus, systemic risk has been recognized as a threat to critical societal systems with impacts extending beyond their origin, as proposed by Renn (2016) and Schweizer and Renn (2019). Other authors studied the connection between physical and political risks (Homer-Dixon et al. 2022; Jerez-Ramíre and Ramos-Torres, 2022). The International Risk Governance Council (IRGC 2018) highlighted the cascading effects that are typical for systemic risks. The extension of systemic risk to include all natural, social, and technological domains led to an inflation of definitions and conceptualizations that emphasize specific features of systemic risks over conventional risks. Table 2 provides an overview of the most popular definitions and characterizations of systemic risks.

[Table omitted]

Based on the intensive discussion on the nature and characteristics of systemic risk, several scholars have suggested core properties of systemic risks, highlighting their complex behaviors (Renn 2016; Lucas et al. 2018a, b; Lawrence, Janzwood, et al. 2022; Renn et al. 2022; Schweizer 2022; Sillmann. et al. 2022). Although terminology may differ, there is consensus that systemic risks possess four key properties (Lawrence, Janzwood, et al. 2022; Lawrence et al. 2023):

* Extremely complex and dynamic networks with multiple, synergistic causes and feedback loops.
* Highly nonlinear cause-effect relationships characterized by disproportional causation, with multiple equilibria, unpredictable tipping points, and hysteresis.
* Causal processes that transcend the boundaries of administrative and political units, social sectors, and scientific disciplines, operating on multiple time scales across natural, social, and technological systems.
* Stochastic relationships involving deep uncertainty about both underlying causes and ultimate consequences.

However, there have been also critical reviews of the concept of systemic risks. Getmansky et al. (2015) argued that the current situation in the literature regarding the definition of systemic risk is not satisfactory and lacks precision and clarity.

Overall, the concept of systemic risk has evolved from its initial mathematical models to a comprehensive understanding encompassing financial, ecological, and societal systems, emphasizing the interconnectedness and cascading effects that characterize modern systemic threats.

3.2 Multiple Perspectives from Different Disciplines

Systemic risk is understood and conceptualized differently across various disciplines, each offering unique insights into its nature and implications (Renn et al. 2022). This section aims to provide a coherent and precise overview of how systemic risk is perceived in fields such as economics, social sciences, engineering, ecology, and disaster risk management.

*Economics and Financial Systems*: In economics, particularly within financial systems, systemic risk is primarily associated with financial crises, regulatory measures, and market interdependencies. Early research focused on bank failures and the theoretical underpinnings of bank runs. Diamond and Dybvig (1983) pioneered the formal modeling of liquidity transformation in banks, illustrating how this could lead to bank runs. Subsequent work by Jacklin and Bhattacharya (1988) and Donaldson (1992) expanded on this by exploring panics, interbank trading, and the probability of financial crises. Kaufman and Scott (2003) provided a widely accepted definition of systemic risk in finance, describing it as the risk of breakdowns in an entire system, evidenced by co-movements among its parts. Systemic risk in banking often refers to a macro-shock affecting the entire financial system (Bartholomew and Whalen 1995) or a sudden event disrupting financial markets (Mishkin 1997). It also includes the micro-level transmission of shocks through interconnected institutions (Kaufman 1995) and the risk of cascading failures triggered by participant defaults (Group of Ten 2001).

*Social Sciences*: Social scientists view systemic risk through the lens of social systems and their vulnerabilities, with a primary emphasis on the unintended or unforeseen effects of multiple interactions between individuals, groups, and organizations modified or shaped by social, economic, political, and cultural context conditions (Lucas et al. 2018a, b). Helbing (2013) highlighted the nonlinear interdependencies resulting from human interactions, which can lead to unpredictable outcomes like social unrest and revolutions. Such systemic risks manifest when societal equilibrium is significantly disrupted by radical movements (Schroter et al. 2014).

*Engineering and Technological Systems*: In engineering, systemic risk is often discussed in the context of infrastructure and technological systems, focusing on resilience, safety engineering, and interdependencies. Technological systemic risk involves potential disruptions within systems like cybersecurity, artificial intelligence (AI), and critical infrastructure, leading to widespread and cascading effects (Schweizer and Renn 2019; Liu et al. 2021). These risks can propagate through interconnected digital infrastructures, affecting sectors ranging from national security to personal privacy.

*Ecology and Environmental Sciences*: Environmental scientists link systemic risk to ecological and environmental systems, assessing interactions between human interventions and natural responses. Systemic risk in this context refers to the potential collapse of ecosystems or widespread disruptions with cascading effects on both ecological and socioeconomic systems (Scheffer et al. 2009; Helbing 2013; Lenton 2013). Examples include climate change, biodiversity loss, and industrial pollution, all of which have far-reaching and interconnected impacts.

*Natural Hazards and Disaster Risk Management*: In disaster risk management, systemic risk involves the potential for natural hazards and disasters to cause widespread, cascading effects across interconnected ecological, social, and economic systems (Lade et al. 2020; Mitra and Shaw 2023; Richardson et al. 2023). This type of risk is shaped by the complexity and interdependencies of modern societies, where disruptions in one area can trigger failures in others. Systemic risks related to natural hazards require comprehensive and integrated approaches to risk assessment and management (UNDRR 2021; Sillmann et al. 2022).

By integrating insights from different disciplines, a more comprehensive understanding of systemic risks can be accomplished. Simultaneously, collaborative governance, adaptive strategies, and holistic analysis are essential for addressing the multifaceted nature of these risks. This multidisciplinary approach is crucial for assessing and analyzing systemic risk as well as developing effective mitigation and management strategies.

3.3 Synopsis: The Relationship between Polycrisis and Systemic Risk

In an increasingly interconnected and complex world, the relationship between polycrisis and systemic risk has gained significant attention. Although these concepts are intimately related, they are also distinct (Lawrence et al. 2024b).

Polycrisis incorporates two core features of systemic risks. First, they both arise from the high degree of interconnectivity among system elements, where a single disruption can generate cascading impacts throughout the system. Second, both imply that discernible boundaries separate one system from another, although discrete systems may influence each other by exchanging energy, matter, information, and people (Lawrence, Janzwood, et al. 2022; Lawrence et al. 2024a; Lawrence et al. 2024c; Renn 2024).

However, polycrisis differs from systemic risk in three important aspects (Lawrence, Janzwood, et al. 2022). First, the studies on systemic risk are primarily focused on the pre-crisis conditions looking into the drivers and causes for interrelated disasters and suggesting potential measures and policies to avoid, prevent, or mitigate these risks. The studies on polycrisis also include the investigation of causal roots of each crisis element but are more focused on how to handle multiple crises once these interconnected crises have manifested themselves. Second, systemic risk is generally assumed to arise within a single system, whereas polycrisis emphasizes the causal entanglement of crises across multiple systems, including coincidences that are not causally related but connected through interacting impacts. This distinction is well established by the concepts of intra-systemic and inter-systemic impacts (Lawrence et al. 2024a). Finally, while systemic risk literature highlights the complexity and nature of interacting risks, polycrisis underscores the complexity of the systems’ environment in which these risks arise (Lawrence, Janzwood, et al. 2022; Lawrence et al. 2024a). Figure 2 provides an overview of the evolution of the debate on systemic risk and polycrisis.

[Figure omitted]

3.4 Challenges for Risk Assessment, Governance, and Communication

The increasingly interconnected and complex world, the emergence of polycrisis and systemic risk—where multiple crises occur simultaneously and interact with each other—presents significant challenges for risk assessment, governance, and communication (Renn 2024). In risk assessment, one of the main challenges is addressing the complex interdependencies between different types of risks. Economic, social, environmental, and political crises do not occur in isolation; they are interconnected through intricate feedback loops (Schweizer 2021). Also, polycrisis situations often exhibit nonlinear dynamics, where small changes in one area can lead to disproportionately large impacts elsewhere (Lucas et al. 2018b). In addition, the combined effect of multiple crises can give rise to emergent properties—outcomes that are not predictable by analyzing individual crises in isolation (Scheffer et al. 2009). Accurate risk assessment relies on the availability of comprehensive data, which are often scarce, incomplete, or difficult to obtain (Sillmann et al. 2022).

Governance in the context of polycrisis is often hindered by fragmented structures and siloed approaches (Renn 2008; Pildes 2023). Different sectors and agencies may operate independently, with limited coordination and communication. This fragmentation can lead to inefficiencies and gaps in the response to crises. Also, polycrisis situations are characterized by rapid changes and high levels of uncertainty. Therefore, enhancing the adaptability and flexibility of governance systems is essential for managing systemic risks (Pildes 2023). Besides, effective governance requires the active participation of a wide range of stakeholders, including government institutions, civil society organizations, the private sector, and local communities (Klinke and Renn 2014). While engaging these diverse stakeholders in decision-making processes can be challenging, they add valuable information and experiential insights for assessing and managing risks. In addition, managing polycrisis requires significant resources, including financial, human, and technical capacities. Many governance structures, particularly in developing regions, may lack the necessary resources to effectively address systemic risks (Sillmann et al. 2022).

### 1NC

Politics DA

#### ACA subsidies will pass now---focus and bipartisanship are key.

Dr. Arthur L. Kellerman 1/13/26, M.D. from the Emory University School of Medicine, M.P.H. from the University of Washington School of Public Health, former director of the RAND Institute of Health and founded the department of emergency medicine at Emory University and the Center for Injury Control at Rollins School of Public Health, professor of emergency medicine at the VCU School of Medicine, senior vice president of health sciences for Virginia Commonwealth University, and CEO of the VCU Health System, “The Senate Has 3 Options In Obamacare Fight”, https://www.forbes.com/sites/arthurkellermann/2026/01/13/the-senates-3-options-in-affordable-care-act-fight/

The U.S. House of Representatives has sent two competing bills to the Senate regarding the Affordable Care Act, also known as Obamacare. One, passed by the House in mid-December, definitively ends the enhanced tax credits in favor of "pro-market" policies. The other, passed by the House last week, extends them for three years.

It’s unclear what the Senate will do. It could defeat both bills and let matters take their course. It could cobble together a compromise for the next two years. Or maybe, just maybe, it will initiate a long-overdue bipartisan push to make American healthcare more accessible and affordable.

The bill to extend the ACA’s enhanced tax credits for three years passed the House Thursday after 17 Republicans joined Democrats to support the measure. The vote was 230-196. Although the Senate defeated a similar measure in December, supporters of the bill hope that senators will reconsider their decision or back compromise legislation.

The vote was made possible after four moderate Republicans broke ranks with House Speaker Mike Johnson on Dec. 17 to sign a Democrat-sponsored discharge petition. Later that day, Speaker Johnson brought an alternative bill to the floor that fosters association health plans, expands Health Savings Accounts and increases scrutiny of pharmacy benefit managers, but it does not extend the ACA tax credits. It passed on a vote of 216-211.

Both bills now head to the Senate.

The Stakes Are High

Partisan battles over the ACA have been going on for years. The conflict resurfaced this fall, when Democrats refused to support a stopgap budget bill unless it extended the ACA’s enhanced tax credits. The resulting impasse triggered the longest government shutdown in U.S. history. On its 43rd day, eight moderate Democrats joined Republicans to back a continuing resolution to extend federal funding until Jan. 30 in exchange for a promised vote on extending the tax credits. The day the vote was held, Senate Republicans introduced a competing measure. Both bills failed.

The ACA is broadly popular. Its 24 million enrollees include farmers and real estate agents, self-employed freelancers, small business owners and their employees, gig workers and others in jobs that don’t provide benefits. Three out of every four of them live in a state Trump won in 2024. On Jan. 1, 2026, premiums jumped dramatically. If nothing is done, up to 4.8 million enrollees may be forced to drop coverage, according to KFF Health News.

Affordability Is The Top Concern

Most Democrats want to spare ACA policyholders from the premium increases. Most Republicans are more concerned about the program’s impact on federal spending. It’s doubtful that enough of the latter will sign on to pass a “clean” three-year extension.

The reason the ACA is unaffordable is because American healthcare is unaffordable for millions of American families, as well as businesses, state governments and the U.S. Treasury. If costs rise by 9% in 2026, as employers predict, healthcare spending could reach $5.9 trillion. That’s $1 trillion more than we spent only three years ago.

What Will Happen Next?

In my view, there are three possible scenarios. Although the first two are most likely, the third is the most promising.

Option 1: Do Nothing

If the past is prologue, neither House bill, or any other, will garner the 60 votes required to pass.

Option 2: Cut a Short-Term Deal

A bipartisan group of senators has been meeting since mid-December in hopes of crafting a compromise to extend the expired tax credits for two years. To win over enough conservatives to pass, it will need measures to control costs. Reportedly, they are close to an agreement.

If Republicans demand higher levels of cost sharing by families, the compromise will do little. Researchers have long known that high copayments lead patients to reduce both high- and low-benefit care by equal amounts. ACA enrollees can reduce their monthly premiums by shifting to a “high-deductible” plan, but it’s risky to do so. Any who subsequently have a medical emergency or develop a serious illness will incur large out-of-pocket costs. In 2026, ACA Bronze plans offer low premiums but require deductibles that average $7,476. Catastrophic plans require enrollees to pay the maximum deductible allowed: $10,600 for an ACA individual or $21,200 for a family before health insurance kicks in, according to KFF. Few low- or middle-income individuals can afford such sums, with or without a HSA. Reducing costs is a wiser course.

Option 3: Focus on Affordability

The morning of last week’s House vote on extending the tax credits, NPR broadcast an interview with Republican Brian Fitzpatrick of Pennsylvania and Democrat Tom Suozzi of New York, co-chairs of the House “Problem Solvers Caucus.” Together, they summarized the problem.

“Health care, even if we get these subsidies put back in place, these tax credits put back in place, is way too expensive," Suozzi said. "We spend way too much money at the end of people’s lives. We don’t spend enough money on prevention. We know the leading causes of early death, avoidable deaths, are smoking, improper diet and lack of exercise, and we have to do more with preventative, making sure people get their primary care early as opposed to waiting until they're very, very sick.”

Fitzpatrick added, “When I grew up in Levittown, doctors, by and large, worked out of their own houses. There was very little between the doctor-patient relationship. And you look at the health care system today, where doctors then started working for hospitals, and then the hospitals were working for insurance companies, and then the insurance companies were working for hedge funds. And there's been massive vertical integration that has been incredibly harmful to the health care delivery system, incredibly harmful to patients.”

Both views are on target. Nations with strong primary care spend less and have better health than the U.S. And vertical integration not only harms patients, it accelerates cost growth. In 2022, nine for-profit companies — all intermediaries between patients and their treatments — accounted for nearly half of all U.S. healthcare spending, according to *The Economist*. That’s where we should focus our attention.

Can Congress seize the moment? I hope so. Extending the Affordable Care Act enhanced tax credits for two (or better yet, three) years would buy time for a bipartisan special committee to focus on this $6 trillion problem. Rep. Fitzpatrick is optimistic. “Do we have enough time to do it? Of course we do," he said. "We know what needs to be done." If problem-solvers like Rep. Souzzi and he are involved, it could work.

#### Labor policy is highly contentious, fractures Congress, and trades off with *other agenda items*---specifically, *healthcare*.

Daniel Kishi 25, policy advisor at American Compass, former Senior Policy Advisor for Senator Josh Hawley, “Can American Labor Law Be Renewed?”, https://www.commonplace.org/p/can-american-labor-law-be-renewed

Although other factors—including international labor arbitrage and excessive union politicking—have been contributing factors, the labor movement points to Congress’s inability to amend the labor law in more than two generations and its failure to combat employers’ anti-union tactics as the principal reason union density declined from more than a third of private-sector workers in 1945 to a record low of less than six percent in 2024. The precipitous decline of unionism undermined the bargaining power of American workers to secure wages and conditions that could support a family, a core concern of conservative economic policy.

Can American labor law be renewed? If the past is prologue, reform efforts will face an uphill battle.

In President Barack Obama’s first year in the White House, Democrats held unified government control, including a filibuster-proof supermajority in the Senate. However, believing they had a broad public mandate to pass health care reform, they used their political capital to enact the Affordable Care Act, and failed to vote on the Employer Free Choice Act, organized labor’s top legislative priority, before Senator Ted Kennedy died and was replaced by a Republican, obstructing the path to the president’s desk.

Most recently, Democrats held control of the White House and both chambers of Congress from 2021 to 2023. The House passed the *Protecting the Right to Organize* (PRO) Act, the omnibus labor reform package championed by unions. However, then-Majority Leader Schumer never put it, or any other labor legislation, on the floor for an up or down vote during the four years he controlled the Senate, suggesting that even members of his own party opposed certain provisions or viewed them as political liabilities.

These reform efforts suffered a fatal flaw: Organized labor and its allies in Congress tried to advance them on an effective party-line basis without meaningful negotiations with Republicans. The success of this strategy hinged on Democrats holding a trifecta and steamrolling opposition across the finish line.

That strategy was a failure. President Trump is in the White House, serving his second term. Republicans control both chambers of Congress. Democrats are in the political wilderness with historically low approval ratings and arguably face an insurmountable path to reclaiming the Senate majority.

#### Cutting ACA subsidies causes pandemic outbreak.

Arush Lal 25, doctoral candidate at the London School of Economics & Political Science, former commissioner on the Chatham House Commission for Universal Health and was a board member and vice chair for Women in Global Health, “Fewer clinics, unhealthier people, less warning: The ‘big, beautiful bill’ will make the US less prepared for pandemics”, https://thebulletin.org/2025/07/fewer-clinics-unhealthier-people-less-warning-the-big-beautiful-bill-will-make-the-us-less-prepared-for-pandemics/

Much of this system is funded by social-safety net programs like Medicaid—programs that the so-called “big, beautiful bill” that Republicans in Congress passed Thursday takes an axe to. The $900 billion in health care cuts in the bill—whether through limiting eligibility, reducing federal contributions, or slashing outreach programs—will dismantle the very mechanisms that enable the rapid identification and containment of health threats. Ultimately, this bill could lead to 12 million people losing their health care coverage. Other policy changes, including that the bill lets tax credits for Affordable Care Act health insurance expire, could lead to an additional 5 million people losing coverage.

As I have argued with colleagues in *The Lancet*, access to primary health care is the cornerstone for preventing disease outbreaks and responding to health crises. Before an outbreak, primary health care providers manage chronic conditions that otherwise increase susceptibility to severe infection and provide early warning of budding threats. During a crisis, those providers help maintain continuity of care, deliver countermeasures, and support community engagement. After a crisis, they provide catch-up services and strengthens long-term recovery.

Outbreaks or pandemics involving novel pathogens, like the 2009 “swine flu” pandemic or H5N1 avian influenza, often affect rural and poor communities first—communities that disproportionately rely on social safety net programs to access care. These are precisely the communities that the bill targets for savings through reduced safety net spending. If local systems are unable to detect and contain outbreaks quickly, the consequences can escalate for public health and the economy. A poorly contained outbreak could prompt other countries to restrict travel, suspend trade, or sever supply chains—decisions that could deepen economic instability and erode the United States’ global credibility.

The United States has already seen more than 130 rural hospitals shut down since 2010, many of them in states that declined to expand Medicaid under the Affordable Care Act. Each closure can leave an entire county without ready access to care, delaying detection of everything from foodborne illness to respiratory outbreaks.

#### Extinction.

Dr. Eoin McLaughlin & Dr. Matthias Beck 25, PhD, Professor of Economics & Head of Research, Department of Accountancy, Economics, & Finance, Edinburgh Business School; PhD, Professor of Management, Cork University Business School, University College Cork, "Managing and Mitigating Future Public Health Risks: Planetary Boundaries, Global Catastrophic Risk, and Inclusive Wealth," Risk Analysis, Vol. 1, pg. 1-25, 01/18/2025, Wiley Online Library.

One conventional GCR-type argument is that pandemics, as GCRs, can be mitigated and/or eliminated via public health interventions (e.g., Kilbourne, 2008). The view that pandemics can be easily mitigated is highly problematic on a number of counts. First, WHO research indicates that many diseases resulted in pandemics that have not been eliminated but rather are prone to ‘‘flare ups,’’ at times of pandemic proportions. Where ‘‘flare ups’’ occur, public health responses are sometimes insufficient with, for example, unequal access to vaccines; an issue that became evident during the 2009 influenza pandemic (Jorgensen et al., 2013). Second, increased presence, and or detection, of zoonotic pandemics again indicate a blurring of boundaries where climate related risk, pressures on food security, and population pressures make traditional PB and GCR boundaries increasingly difficult to define. This is exemplified by the recent avian influenza outbreak in the Russian Federation that, albeit identified as low risk, calamitously paralleled the ongoing Covid-19 pandemic (WHO, 2021b).

5 INTERACTION OF PLANETARY BOUNDARIES AND GLOBAL CATASTROPHIC RISKS

Interactions of risky and near-catastrophic events create risks at several levels (Helbing, 2013).18 There is discussion within the GCR literature on the interaction of risks, with research focusing on the impact on food security of a GCR, such as a pandemic or nuclear war (Helfand, 2013; Huff et al., 2015), but this seems less clearly discussed in the PB literature.19 Continuous interactions, at different scales, meanwhile, are seen as integral to the function of social–ecological systems (Reyes et al., 2018). Interactions are foundational to the understanding of complex systems and the aggregation of such interactions can lead to properties greater than the individual components (Cillers, 2013; Jensen, 2023), with key properties of complexity relating to interactions.20 Figure 6 is a representation of the approach taken in systematic risk, if there is only one risk within a system, then an assigning probability of risk to that element will suffice, but if there are multiple elements at risk, then the question becomes whether or not they are related and then, if they are related, what is this relationship (Hochrainer-Stigler, 2020). This relationship may imply dependence (interpreted as correlation) of risks or “tail dependence,” whereby the relationship is found in the tails of the distribution. Thus, an important consideration is whether the interaction of risks implies subadditivity, additivity, or supraadditivity (synergistic interaction) of risk; evidence suggests that the interaction of risks can amplify risks (e.g., Arrigo et al 2020). The challenge with such complex interactions is the difficulty in preparing, controlling, and managing these interactions once they do occur (Helbing, 2013). Synergistic risks would be of greatest concern in the context of PBs and GCRs as the impact would be greater than that of a risk in isolation.

[Figure omitted]

An historical example of how influential such risk interactions can be comes from the worst pandemic in the modern era:21 the 1918 influenza pandemic. Death estimates for this event are close to 3–5% of global population, but contextualization is needed.22 The 1918 pandemic coincided with the end of a global war; the First World War created the ideal conditions for the spread of influenza among a warweary population. Moreover, the war itself appears to have been given a low probability by contemporaries as judged by financial markets (Ferguson, 2006), this is despite historians documenting various international crises in years preceding the war. In contrast to the 1918 influenza pandemic, the less heralded global influenza pandemic of 1889–92 had a much lower death toll, with no other coinciding global phenomena. This demonstrates the dangers of extrapolating lessons from 1918 and applying them to modern events without contextualization- the pandemic was undeniably exacerbated by the global war—but at the same time, this illustrates the importance of the interaction of risks (Doran et al., 2024).

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.

## Experts ADV

### Turn---1NC

#### Scaling up nuclear energy *crowds out* decentralized renewables.

Dr. Benjamin K. Sovacool et al. 20, PhD in Science and Technology Studies from Virginia Tech, professor of energy policy at the University of Sussex, where he directs the Center on Innovation and Energy Demand and the Sussex Energy Group, formerly Director of the Danish Center for Energy Technology at the Department of Business Development and Technology and a professor of social sciences at Aarhus University, also with Patrick Schmid, Andy Stirling, Goetz Walter, and Gordon MacKerron, “Differences in carbon emissions reduction between countries pursuing renewable electricity versus nuclear power”, Nat Energy 5, 928–935, https://doi.org/10.1038/s41560-020-00696-3

The crowding out hypothesis

Our final hypothesis, the crowding out hypothesis, is that the relative scale of nuclear attachments will tend to associate negatively with renewables attachments, and vice versa. In simpler terms, the two options show a tendency to mutual exclusion, and each creates lock-ins or path dependencies that crowds out the other.

There exists no shortage of candidates for the kinds of mutual incompatibility, reciprocal tension and active antagonism that might (in one direction or another) serve to drive this crowding out. Take the configuration of electricity transmission and distribution systems, for instance. It is well recognized that a grid structure optimized for larger-scale centralized power production (like much conventional nuclear power) will tend on balance to make it more difficult, time-consuming and costly to introduce small-scale distributed power (like many renewables). The same is true of the associated norms, protocols, contracts, and operating codes and expert cultures necessary to make these structures work 20. Likewise, although the limited relevant history of existing electricity systems around the world makes this more uncertain, it is probably the case on each of these points that the reverse may also be true (that is, that optimization around renewables would impede nuclear).

In broadly comparable ways, finance markets, regulatory institutions and employment practices structured around large-scale, base-load, long-lead-time construction projects for centralized thermal generating plants will not handle so well a multiplicity of much smaller, short-term, distributed initiatives, and vice versa. The particular necessity with nuclear power of elaborate governance arrangements around potentially catastrophic safety risks, security against attack, long-run waste management and safeguarding against proliferation also tends to sideline resources and attention from other options 21. On the other hand, the erosion by renewables of the funding base for these expensive arrangements will tend to raise the unit costs falling on nuclear power. Finally, whatever the detail may be of particular interdependencies, the undoubted military connections and security repercussions displayed by nuclear power but not renewables mean (depending on context) that each will tend to be favoured under contrasting political circumstances and perspectives, thus introducing another mutual tension 22. Indeed, there is a wider sense in which nuclear power and renewables each reflect ‘technological aesthetics’ that are valued by contrasting socio-political communities, such that whatever the operational merits may be judged to be, either will incur the antagonism of the constituency associated with the other.

#### Momentum for decentralized renewable power is strong now---that’s vital to grid resilience. Collapse causes cascading blackouts.

Habeeb Shittu 25, Electrical Engineer II at Moffatt & Nichol, has a robust background in Electrical Power System Design and Substation Engineering, coupled with expertise in SCADA (Supervisory Control and Data Acquisition) Systems engineering, current Graduate Teaching Assistant North Carolina Agricultural and Technical State University, “Microgrids as a Solution for Disaster Resilience and Cybersecurity – Decentralized Energy Systems Reducing Grid Vulnerabilities”, https://energycentral.com/c/gr/microgrids-solution-disaster-resilience-and-cybersecurity-%E2%80%93-decentralized-energy

Today, the grid is in great jeopardy from both environmental catastrophes and cyber warfare. The excessive dependence on centralized power grids results in extended power outages and increased cyber security vulnerabilities in times of hurricanes, wildfires, floods and cyberattacks. Microgrid technology has emerged to provide a pathway to disaster resilience while decentralizing the energy system and boosting cybersecurity.

Small electric power systems called microgrids act alone as standalone power units which produce and send electricity independently. An independent operational capability exists within microgrids combined with their ability to link with central power systems in emergency situations. Microgrids minimize fossil fuel demands through solar and wind-based renewable power generation with battery systems which ensure continuous electricity supply under adverse conditions. Microgrids also help electric vehicle charging stations and support smart grids (systems and technology that improves energy use at peak times and responds in a timely manner to energy needs).

Leverage auxiliary networks for disaster relief. Microgrid systems were instrumental in powering up devastated communities in Puerto Rico after the island was hit by Hurricane Maria showing how effective they can be when dealing with disaster recovery. Likewise, during the Texas winter storm of 2021, widespread blackouts highlighted the urgency of local energy solutions. Microgrid installations spread across Texas in the years that followed and have offered reliable power and less reliance on an aging main grid. Projects of hospitals together with water treatment facilities and critical infrastructure benefit from microgrids which allow them to function during larger system outages. These systems deployed at military bases enhance protection of vital mission operations by shutting out both digital and physical safety threats.

The vulnerability of national energy systems relies heavily on cybersecurity because attackers seek to attack traditional networked energy systems. The integration of microgrids as multiple interconnected smaller systems for distributing power is already established throughout various American cities. The integration of blockchain and AI-driven threat detection technologies into microgrids improves their overall cybersecurity. The security system becomes stronger through communication encryption alongside real-time intrusion detection improvements and lower cyber tampering risks. Widespread outages occurred in Ukraine because hackers targeted its power grid during 2015 and 2016. Such attacks would have caused smaller impacts because widespread implementation of microgrids would have occurred.

During a cyberattack, microgrids can isolate compromised areas, preventing cascading failures that lead to large-scale blackouts. AI-powered monitoring systems provide real-time analysis, allowing operators to detect and mitigate threats efficiently. Blockchain technology enhances security by creating immutable energy transaction records, reducing exposure to cyber fraud. By decentralizing the power supply, microgrids introduce redundancy and resilience, making energy networks far less susceptible to widespread failures.

The deployment of microgrids has proven beneficial across various applications. In California, microgrids have been installed in wildfire-prone areas to maintain power during transmission line shutdowns. Remote rural regions worldwide have adopted microgrids to ensure electricity access where extending the main grid is neither feasible nor cost-effective. Humanitarian aid organizations, including the United Nations and the Red Cross, have explored microgrid-powered camps to provide emergency electricity in disaster-stricken and refugee areas. Additionally, microgrids are increasingly used in the healthcare sector, ensuring critical facilities remain operational during crises. Recognizing these benefits, governments are investing in microgrid projects to strengthen infrastructure resilience and accelerate technological adoption.

Despite their advantages, microgrids face challenges related to cost efficiency, regulatory barriers, and integration with existing power systems. While initial deployment costs can be significant, long-term energy savings and improved reliability justify the investment. However, many regions lack clear policies to support widespread microgrid adoption, necessitating regulatory frameworks that facilitate seamless integration. Continued advancements in power transmission technology are essential for microgrids to function effectively alongside traditional grids. Collaboration between the public and private sectors is necessary to establish standardized guidelines, ensuring efficient implementation across industries and communities.

Governments can encourage microgrid adoption through subsidies and incentives. Countries like Japan and Germany have already implemented financial programs to support microgrid installations, ensuring a transition to more resilient energy networks. Urban projects such as the Brooklyn Microgrid in New York City demonstrate the feasibility of decentralized energy solutions. The Brooklyn Microgrid allows peer-to-peer energy trading, enabling residents to sell excess solar power within their community, reducing reliance on centralized utilities while promoting renewable energy use. Similar microgrid projects in African nations have provided electricity to remote villages, fostering economic growth and improving quality of life.

As the global energy landscape shifts, microgrids represent a fundamental step toward a more secure and resilient power infrastructure. By decentralizing energy generation and incorporating state-of-the-art cybersecurity protections, microgrids are becoming a key component of modern energy strategies. Investing in microgrid technology enables governments and private enterprises to safeguard critical infrastructure against natural and cyber threats, ensuring a sustainable and secure energy future. Through continued innovation, supportive policies, and strategic investments, microgrids will play a pivotal role in building a stronger and more adaptable energy ecosystem for future generations. Given rising climate uncertainties and escalating cyber threats, microgrids stand as a crucial safeguard, ensuring communities, industries, and essential services remain resilient and operational in any crisis scenario.

#### Grid collapse ends civilization.

James Christopher 25, Founder and Managing Director at Signet Science, holds master’s degrees from Kingston University London and the University of Liverpool, “Securing Water & Energy Before a Crisis Hits This Year”, https://jameschris.medium.com/shield-your-household-from-resource-disruption-b1f064934cde

Strip away the digital veneer of our modern civilization — the smartphones, the streaming services, the smart home symphony — and you’re left with two fundamental pillars of survival: water and power.

We take them for granted until the taps run dry and the lights flicker out. While food and shelter form the foundation of survival, they’re supported by the invisible architecture of modern existence — power grids and water systems.

Think of it this way: our ancestors could hunt or gather food, and shelter was a matter of finding the right cave or building materials. But try gathering megawatts or harvesting municipal water pressure through sheer willpower and determination.

That’s why I’m focusing in on these twin pillars of modern survival: not because food and shelter matter less, but because when power and water fail, even the best-stocked shelter can become an uncomfortably warm cave with expensive canned decorations.

I want you to be better prepared.

The Probability of Darkness

The fragility of our power and water infrastructure isn’t just theoretical — it’s a ticking probability bomb with multiple detonators.

From natural disasters to cyber attacks, from solar flares to physical sabotage, the ways our critical systems can fail are multiplying faster than our defenses evolve.

Climate change has transformed “once-in-a-century” events into seasonal visitors, while the U.S. Department of Energy tallies over 200 significant cyber attacks targeting energy infrastructure annually.

“The question isn’t if you’ll face a resource crisis — it’s which one will arrive first, and how prepared you’ll be when it does.”

Then there’s the cosmic joker in the deck: solar flares.

A Carrington Event-level solar storm — like the one that hit Earth in 1859 — would today cascade through our power grids like digital wildfire.

NASA’s estimate of a 12% probability for such an event within the next decade should give us pause. It’s not comfortable odds when the stakes include continent-wide blackouts. Although, I would consider serious state-sponsored cyber attacks and severe natural disasters higher likelihoods in the next five years.

The Cruel Dependency

Here’s where it gets interesting: water and power dependencies run both ways.

No power means no pumps.

No pumps means no water pressure.

No water pressure means failed cooling systems.

Failed cooling systems mean more power failures. It’s a cascade effect that transforms localized inconvenience into regional catastrophe.

Modern civilization runs on this precarious balance of electricity and water. Lose either one, and the other becomes increasingly difficult to maintain. The Texas power crisis of 2021 wasn’t just a failure of infrastructure — it was a preview of coming attractions.

#### Even a limited expansion of nuclear power *destroys the biosphere*.

Dr. M.V. Ramana 24, PhD in Physics from Boston University, Professor and Simons Chair in Disarmament, Global and Human Security at the University of British Columbia, and Director of the Master of Public Policy and Global Affairs program at the School of Public Policy and Global Affairs, previously worked at the Nuclear Futures Laboratory and the Program on Science and Global Security, both at Princeton University, member of the International Panel on Fissile Materials, the International Nuclear Risk Assessment Group, and the team that produces the annual World Nuclear Industry Status Report, “Nuclear is not the solution: atomic power in the age of climate change”, Verso Books

My bottom line is that nuclear energy, whether with old reactor designs or new faux alternatives, will simply not resolve the climate crisis. The threat from climate change is urgent. The world has neither the financial resources nor the luxury of time to expand nuclear power. Meanwhile, even a limited expansion would aggravate a range of environmental and ecological risks. Further, nuclear energy is deeply imbricated in creating the conditions for nuclear annihilation. Expanding nuclear power would leave us in the worst of both worlds.

Too virtuous to meter?

Proponents of nuclear energy have other reasons to support their preferred technology. They argue that nuclear reactors can do much more than just generate electricity. The “much more” depends on the specific context, and could include creating well-paying jobs, boosting national pride, providing energy independence, supplying clean water, and producing medical isotopes to treat cancer. As the public has become more concerned about climate change, nuclear advocates have appended to this list two more applications for energy from nuclear reactors: capturing carbon dioxide from the atmosphere (direct air capture) and producing hydrogen and high temperature heat for industrial processes.

All of these are reminiscent of what Admiral Lewis Strauss, one of the central characters in the hit Hollywood film Oppenheimer and the chair of the US Atomic Energy Commission in the 1950s, told the National Association of Science Writers on September 16, 1954. Ten days after the ground-breaking for first US nuclear plant, Strauss told his audience that given the great promise of nuclear technology, it would not be “too much to expect that our children will enjoy in their homes electrical energy too cheap to meter.”

The many claims about what else nuclear reactors can do make one wonder: Is nuclear energy too virtuous to meter?

Let me offer one example from a company called Hyperion Power Generation offering a small nuclear power plant design that was actively covered in the media between 2007 and 2012. In March 2010, the founder of this company, John Deal, told the Albuquerque Journal, “We started this company to clean water in Africa … Our emphasis is helping people not die from not having clean water … If you’ve got energy, you can have all the clean water you want.”

This was not a one-off sales pitch. In their 2011 article in Issues in Science and Technology, writer Ross Carper and academic Sonja Schmid offer this description of Deal in action:

In the middle of Deal’s talk in Denver, he began flipping through some artist-drawn images. The most striking of all shows a small nuclear reactor, buried and unattended at what looked to be less than 15 feet below the surface. Two simple tubes snake upward from the reactor, drawing the eye to a pair of gray above-ground tanks, with the words “Potable Water” stamped on the side. The setting? An impoverished African village complete with about a dozen mud constructed, thatch-roofed huts. A handful of people were drawn into the image, all of them walking to or from the clean water source, which is apparently powered by a $50 million HPM.7

HPM stands for Hyperion Power Module, the nuclear reactor the company was advertising, and the cost estimate of $50 million for a nuclear reactor should be seen in that light—as wishfully cheap. (A few years later, Pitch Book, a database of private equity-based corporations, listed the company as “out of business.”)

Such promises of atomic energy delivering progress to Africa date back to the beginning of the nuclear age. On January 28, 1947, for example, Waldemar Kaempffert, the science editor of the New York Times, predicted,

The desert of Sahara could easily be irrigated by electric pumps driven by uranium power, with the result that more surplus cotton than we could sell at a profit and more surplus plant food than we could eat would be dumped on the market. Africa would be transformed into another Europe, with savages [sic!] who never saw a steam shovel or railway train transformed into machine tenders.8

After more than half a century of experience with nuclear technology, ideas about using it to provide clean water to poor people are delusional at worst and deceptively self-serving at best. Reducing the problem of insufficient clean water to an absence of energy ignores the many other problems that prevent African villagers from accessing clean water and the persisting legacies of colonialism and imperialism that led to “underdevelopment” in the first place.9

In his “communal memoir” of the aerospace industry Blue Sky Dream, the journalist David Beers talks about a special characteristic of the former Nazi rocket scientist Wernher von Braun, the man sometimes termed “the father of America’s space program” due to his important role in transferring rocket technology to the United States.

The classic American entrepreneurial hero searches out unmet desires in the everyday world and then, with a certain flexible flair, invents the answers, products for the masses to use. Von Braun’s genius lay elsewhere. He was brilliant at inventing new and different uses for the only product he ever desired to make, the space rocket. He was a master at selling his one product to the only customers who could ever afford it, a nation’s rulers.10

Much like von Braun, vendors and advocates of nuclear power are really interested only in selling nuclear reactors, and they try to invent different uses for their favoured product. Delivering clean water, heating houses or industries, and propelling rockets and ships are all only vehicles for selling nuclear reactors. However, the appeal to other uses for nuclear reactors is also, simultaneously, an expression of the inability of the technology to economically deliver on its primary product: electricity. It is the weakness of the nuclear industry that forces it to seek alliances with other constituencies.

Too destructive to meter?

Nuclear energy does have one virtue, but it is one that its advocates, for the most part, avoid mentioning: its innate and inseparable connection to nuclear weapons, and more generally, to the military. I use the word “virtue” to mean both an inherent attribute and an asset beneficial to its proponents. Technically, there are significant overlaps between the apparatus needed to produce nuclear energy and what is needed to produce the fissile material, the hardest step in acquiring nuclear weapons. In addition, personnel can be interchanged between the nuclear energy and weapons programs. And finally, there are institutional incentives for organizations developing nuclear energy to get involved in making nuclear weapons, due to the political power that flows from the latter. Nuclear technology also contributes to powering long-range submarines, especially those used to fire off nuclear missiles, and to providing the material to manufacture depleted uranium munitions used in Iraq and Ukraine. I elaborate on these connections in chapter 5.

Nuclear energy advocates often argue against conflating nuclear energy with nuclear weapons, but the connection is visible for all those who want to look. As of September 2023, 275 of the 410 nuclear reactors labelled as operating by the International Atomic Energy Agency are in countries possessing nuclear weapons. Add countries like Canada and Japan that are militarily allied with nuclear weapon states, and the overlap is staggering. While it is certainly true that not all countries with nuclear energy have produced nuclear weapons, they are closer to being able to do so than they would be if they had never built nuclear reactors.

The overlap between the two technologies was obvious to most knowledgeable people at the beginning of the atomic age. In 1946, when discussing a proposal for the international control of nuclear weapons, Robert Oppenheimer, the head of the program that produced the first atomic bombs, which destroyed Hiroshima and Nagasaki, expressed it thus: “We know very well what we would do if we signed such a convention: we would not make atomic weapons, at least not to start with, but we would build enormous plants, and we would design these plants in such a way that they could be converted with the maximum ease and the minimum time delay to the production of atomic weapons.”

Within a few years, however, countries with nuclear technology started a sustained campaign to get the public to think differently about nuclear energy, most notably after President Dwight Eisenhower’s “Atoms for Peace” speech in 1953. This “greatest of destructive forces,” Eisenhower prophesized, “can be developed into a great boon, for the benefit of all mankind,” can be put to “universal, efficient and economic usage” and whose “special purpose would be to provide abundant electrical energy in the power-starved areas of the world.”

In other words, forget the destructive capacity of nuclear energy. Just focus on what a wondrous future it can create. The Soviet counterpart of this effort is captured by the slogan “May the atom be a worker, not a soldier.” The hope seems to be that by pretending that nuclear energy was not linked to weapons, public fears about the destruction that would result from the use of nuclear weapons would be quelled.

Institutions and governments around the world developing nuclear technology often start by touting its potential to produce electricity. This was the case in India. For over two decades, India’s Atomic Energy Commission was ostensibly working on nuclear energy only “for peaceful purposes,” until the 1974 test of a nuclear weapon blew up that pretense.11

Many private companies profit enormously from both nuclear energy and nuclear weapons. Examples include Bechtel, Babcock & Wilcox (now BWX Technologies), and Fluor in the United States, Larsen & Toubro in India, and Rolls Royce in the United Kingdom. While there might not be a similar level of involvement by private companies in countries like China, where public sector and national organizations play the analogous roles, the differences between the two categories are not very material to understanding the structure of, and trends in, the nuclear sector. National laboratories contract out work and are sometimes even managed by private companies. And private companies thrive on public contracts that they often have exclusive access to, belying any notion of free markets and competitive entrepreneurship.

For both corporate and governmental entities, nuclear technology is a wonderful asset. As analyst and disarmament activist Andrew Lichterman argues:

The nuclear road provides elites in nuclear establishments with privileged access to their own country’s resources, a development context that can be shielded from foreign competition, and forms of trade and industry that can be portrayed as increasing in importance as fossil fuels diminish. This is so whether the intention to develop nuclear weapons is clear or is allowed to remain ambiguous. The powerful tools of nationalism and ‘national security’ secrecy can be used to facilitate the extraction of wealth from the rest of society and prevent scrutiny of national nuclear enterprises that whether in first generation nuclear powers or post-colonial states have been rife with technical problems, corruption, and widespread, intractable environmental impacts.12

Overview of the book

The chapters that follow explain why expanding nuclear power production is neither a desirable nor a feasible solution to climate change. Due to the use and production of radioactive materials at reactors, expanding nuclear energy to mitigate climate change will inevitably result in a variety of undesirable risks and environmental impacts. Nor is it compatible with environmental and social justice.13 The consequences and burdens of such an expansion will fall primarily on communities that are distant from the centers of power, and economically and politically too marginal to figure in the calculations of decision makers.

In chapter 1, I explain how all nuclear reactors, including small ones, are at risk for severe accidents due to their intrinsic technological characteristics. When it comes to nuclear facilities, I will argue, there is nothing that fits a strict definition of “safe.” The risk is exacerbated by a range of factors, including extreme weather patterns due to climate change, the multiple and conflicting priorities of organizations operating nuclear facilities, and the weakening of regulation by industry lobbyists and other powerful economic actors. Accidents, when they occur, produce radioactive contamination that reaches across space and time; thirty-five years after the Chernobyl accident, parts of Ukraine and Belarus are still uninhabitable because of high radiation levels. Radioactive cesium released by the disaster was found in sheep in England, which remained contaminated for decades; restrictions on eating these sheep were lifted in all areas only in 2012.

Expanding nuclear energy production will also result in a growing inventory of radioactive wastes, no matter what kinds of reactors are used. Some of these wastes remain radioactive, and thus hazardous to human health, for hundreds of thousands of years. Despite decades of well-funded research, there is no demonstrated way to safely manage them, and because of the long periods involved, there will always be uncertainties about the fate of these materials.14 As a result, it is likely that radioactive materials will contaminate the biosphere at some point in the future. This is an important cause for opposition from communities near sites chosen for nuclear waste repositories.

Another concomitant activity to the operation of reactors is uranium mining, which has been responsible for contaminating land and water around the world, especially in areas occupied by Indigenous communities. Given these inevitable impacts, nuclear power is neither clean nor sustainable.

One way that some nuclear energy advocates try to get around these conclusions is by claiming that exposure to radiation is harmless, at least below some threshold. But as I explain, there is ample evidence that exposure to radiation, even at low levels, leads to cancers and other negative health outcomes.

#### No existential climate impacts, adaptation solves, AND war turns it.

Dr. Harry DeAngelo & Dr. Judith A. Curry 25, PhD, Chair Emeritus, Marshall School of Business, University of Southern California; PhD, Professor Emeritus, School of Earth & Atmospheric Sciences, Georgia Institute of Technology, "A Critique of the Apocalyptic Climate Narrative," SSRN, 02/19/2025, pg. 1-4. [italics in original]

Hypothesized damaging consequences of global warming include (i) loss of life from greater intensity and frequency of heat waves, hurricanes, floods, droughts, and wildfires and (ii) economic losses from such extreme-weather events and from sea-level rise due to melting polar ice caps. Assessments of the impact from human-caused warming are complicated by the difficulty of determining the extent to which observed temperature increases are caused by natural climate variability – a difficulty that adds to the uncertainty in estimates of how much human-caused warming to expect over the 21st century.

*Warming over the past 120 years*

The question of whether global warming is dangerous (whatever its cause) can be addressed by examining the behavior of the climate since before the time human activity generated large amounts of greenhousegas emissions. Human-caused global warming is typically measured with reference to pre-industrial times; for practical reasons in terms of the availability of data, the usual approach employs a baseline period in the late 19th century. Since the late 19th century, Earth’s average temperature has increased by about 1.3o C (2.3o F). During the same period, average global sea level has risen 8-9 inches, and there has been little or no detectable change in most types of extreme weather events when measured against the background of natural weather and climate variability.

Since the late 19th century, with 1.3o C of global warming, humanity has seen unprecedented increases in prosperity and well-being. Global population has increased from about 1.6 billion in 1900 to 8.2 billion people in 2024. In 1900, the global average lifespan was 34 years; in 2024 the global average lifespan more than doubled to 73 years. From 1961 to 2020, global agricultural output nearly quadrupled, with a 53% increase in per capita output despite a 2.6-fold increase in global population.

Since the early 1900s, per capita mortality from hurricanes, floods, droughts, and wildfires has decreased by almost 98% (Koonin (2021, page 170)). These favorable trends in weather- and climate-related mortality rates reveal that the world is now much better at preventing deaths from extreme weather and climate events than it was a century ago. The sharp reduction in death rates has been accomplished through greater wealth (driven by energy derived from fossil fuels), which provides better infrastructure, superior advance-warning technologies, and greater capacity to recover from weather-related disasters.

Although the role of higher temperatures and atmospheric CO2 concentrations in these favorable changes in mortality rates is open to debate, two aspects of the increases are unambiguously beneficial. First, satellite observations since the 1980s indicate widespread greening of the planet. The satellite data show that, over the last two decades, Earth has increased its green leaf area by approximately 5%. This greening reflects increased CO2 fertilization, warmer temperatures, and more rainfall (Chen et al. (2024)).

The second aspect relates to heat and cold extremes. An unambiguous consequence of global warming is more frequent heat extremes, coupled with less frequent cold extremes. It is well known that mortality is substantially greater (almost a factor of 10) for extreme cold than for extreme heat (Zhao et al. (2021). Consequently, rising temperatures are associated with a *net saving of lives* owing to the reduction of mortality from extreme cold events. Heat-related mortality is also declining over time (O’Neill et al. (2021)), owing to general improvements in health care systems, increasing prevalence of residential air conditioning, and behavioral changes – factors that have dominated any impact of a warmer planet on the risk of heat-related death.

Although the dollar value of damages from extreme weather events is now greater than it was many decades ago, this increase is the result of increasing vulnerability and exposure associated with greater population and concentration of wealth in coastal and other disaster-prone regions. A recent analysis summarizing many studies finds no evidence to support claims that any part of the overall increase in global economic losses from weather and climate disasters can be attributed to global warming (Pielke (2020, 2023)).

*Prospective warming over the 21st century*

What about warming over the rest of the 21st century? Is there reason to expect dire consequences for humanity going forward in time?

The Apocalyptic climate narrative and the most extreme impacts are driven by extreme emissions scenarios, with 4-5o C of warming by 2100 (above a baseline in the late 19th century). However, since 2021, the UN’s climate negotiators have abandoned extreme emissions scenarios as unrealistic for two reasons. First, they make unrealistic assumptions, especially about coal use. Second, actual emissions have been tracking well below their most extreme emission scenario, and indeed slightly below their medium emissions scenario. The UN is now working with an estimated year 2100 warming of 2.5°C (UNFCCC (2022)), while the IEA Roadmap to NetZero projects 2.4°C of warming by 2100 (IEA (2023)). When plausible scenarios of natural climate variability and values of climate sensitivity on the lower end of the UN’s IPCC likely range are considered, the expected warming could be significantly lower (Lee et al. (2021)).

If we work with 2.5°C projected warming by 2100, more than half (1.3°C) of the predicted increase in temperature has already occurred. There are good reasons to expect continued advances in prosperity and well-being over the remainder of the 21st century – and ample reasons such as AI to expect such advances to accelerate. Moreover, the so-called threshold of danger of 2°C warming since pre-industrial times is not an objective threshold of danger. Rather, 2°C is a politically negotiated target designed to motivate broad-based actions to reduce emissions (Curry (2023, page 9)).

Importantly, there is no credible case that missing the 2°C target would pose an existential risk to humanity. Humans have adapted to (and thrived in) climates extremes far worse than in the pessimistic extreme scenario, as summertime residents of Phoenix and wintertime residents of Minneapolis demonstrate every year.

Two other risk-related points are relevant here. First, a basic assumption in the socioeconomic scenarios used in formulating the UN climate-assessment reports is that vulnerability to weather and climate extremes decreases with greater wealth and economic development, as adaptive capacity increases. All of the Shared Socioeconomic Pathways (SSPs) scenarios constructed for the most recent UN climate assessment entail dramatic growth, with global GDP in 2100 between four and ten times larger than in 2010 (Dellink et al. (2017)). These scenarios do not imply any futures for humanity that are worse than today.

Second, risks from human-caused global warming are difficult to separate credibly from natural weather and climate variability and the risks are dominated by the vulnerabilities of less-developed countries and poorer populations generally. Increasing wealth and productivity will continue to reduce humanity’s vulnerability to weather- and climate-related risks.

*Tipping points and surprises*

Uncertainty about the impact on humans of continued use of fossil fuels is dominated by the difficulties of estimating the likelihood of catastrophic outcomes from climate tipping points that could cause severe and possibly irreversible damage.

Climate tipping points are defined as abrupt or nonlinear transitions to a different climate state, which are hypothesized to occur once some threshold has been crossed, with regional or global consequences that are largely uncontrollable and beyond our management. In other words, tipping points are points of no return, at least on the century timescale. In recent geologic history, abrupt climate change has been caused by changes in ocean circulation patterns and ice-sheet dynamics, including (i) the Younger Dryas (12,900- 11,700 years ago) when global temperatures dropped by up to 15o C in some regions, (ii) an unnamed sudden cooling event that occurred around 8,200 years ago and that lasted about 150 years, and (iii) the Dansgaard-Oeschger Events (115,000-11,500 years ago) with a series of abrupt warmings and cooling during the last Ice Age with temperature shifts of 5-10o C occurring within decades.

The IPCC Assessment Reports have considered a number of potential tipping points associated with global warming, including ice-sheet collapse, collapse of the Atlantic Overturning Circulation, carbon release from permafrost thawing, and destruction of the Amazon rainforest and coral reefs. There are some preliminary climate model simulations for some of these conjectured tipping points. However, climate models do not include the appropriate physical, chemical, and biological processes to adequately simulate such events. Hence, these hypothesized climate tipping points have been based largely upon the consideration of imperfect analogues from the geologic past, process models, and physically based storylines.

The likelihood of any of the above types of hypothesized tipping points occurring in the 21st century under the medium emissions scenario is generally regarded as low, although there is also low confidence in any conclusions surrounding possible tipping points owing to deep (Knightian) uncertainties in our understanding of the complex climate system.

Could something genuinely catastrophic happen to the climate on the timescale of the 21st century? Yes, although continued use of fossil fuels is not the only possible cause. For example, a climate catastrophe could also be caused by nuclear war, a series of explosive volcanic eruptions, natural shifts in ocean circulation patterns, and/or shifts in ice-sheet dynamics driven by geologic processes.

It is impossible to remove all sources of climate-related risk, and it would be unwise to attempt to try to avert low probability climate catastrophes with policy actions that would themselves surely impose massive near-term costs on humanity. There is no doubt that aggressive near-term suppression of fossil-fuel use would impose significant costs on humans until such time as viable replacements for fossil fuels were found for the roles they play in the production of food, steel, cement, and plastics.

The critical implication: In terms of rational risk management, there is no case for policies that would suppress fossil-fuel use aggressively simply because something bad might happen. For such suppression to be rational, we should have good reason to think that the low probability climate catastrophe we would avoid would be far worse than the catastrophe we would surely induce by moving aggressively to net zero. We have yet to see anyone provide credible support for the latter argument.

#### The newest, conclusive study concurs.

Roger A. Pielke 24, Nonresident Senior Fellow at the American Enterprise Institute and a professor in the College of Arts and Sciences at the University of Colorado Boulder, 11/13/24, “Global Existential Risks,” https://rogerpielkejr.substack.com/p/global-existential-risks

In 2022, on a bipartisan basis, the U.S. Congress passed the Global Catastrophic Risk Management Act of 2022 requiring the Department of Homeland Security to coordinate an expert assessment of global catastrophic and existential risks. The Department of Homeland Security published the first Global Catastrophic Risk Assessment two weeks ago, and reached some important — and one surprising — conclusions.1

The legislation provided key definitions:

The term ‘‘existential risk’’ means the potential for an outcome that would result in human extinction.

The term ‘‘global catastrophic risk’’ means the risk of events or incidents consequential enough to significantly harm or set back human civilization

at the global scale.

The term ‘‘global catastrophic and existential threats’’ means threats that with varying likelihood may produce consequences severe enough to result in systemic failure or destruction of critical infrastructure or significant harm to human civilization.

Congress requested that the assessment focus on six areas of risk:2

the use and development of artificial intelligence (AI);

asteroid and comet impacts;

sudden and severe changes to Earth’s climate;

nuclear war;

severe pandemics, whether resulting from naturally occurring events or from synthetic biology;

supervolcanoes;

Using the key definitions across these six categories, the table below summarizes my reading of the report.

A close-up of a chart

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Below is the full summary table from the report, within which, each chapter goes into extensive detail on each of the six risk categories.

A list of informational text

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The report is well done, and each of the six risk areas are worth their own focused post here at THB.3 In the remainder of this post, I highlight what the report says about climate change — which the report does not identify as an existential risk.

The assessment recognizes that changes in climate have many significant consequences for people and ecosystems, but the corresponding risks are local and regional, not global:

“An important dynamic of climate change effects is that any one mechanism by which climate change creates risk, such as those listed above, although potentially devastating on a local to regional scale, might not rise to the level of a global catastrophe or an existential risk.”4

The report acknowledges diplomatically that activists often characterize climate change as an existential risk, which reflects “subjective values and worldviews” rather than scientific judgments of real-world risks:5

“A strong, international activist movement now exists that engages in advocacy for addressing climate change. That movement emphasizes the urgency of climate change; sponsors civic engagement efforts, including protest and civil disobedience, particularly among youths around the globe; and argues that climate change is a potential existential risk. . . although social movements reflect a genuine and legitimate concern about climate change’s potential risks to society, they are not necessarily grounded in objective assessment of those risks.”

The report acknowledges some of the extreme claims found in the scientific literature from those in the catastrophist planetary boundaries community as well as some of the outlier work in climate econometrics. However, the assessment largely rejects these outliers and is very clear in its conclusion that climate change does not present a catastrophic health risk — even over the course of a century:

“Although there is no accepted determination of what would constitute a global catastrophic health risk from climate change, authors of at least one report defined it as a mass-mortality event taking the equivalent of 25 percent of the population. For the United States, based on the 2020 population (330 million), percent would mean approximately 80 million people, or 2 billion for the estimated global population in 2022 of 8 billion. . . Mortality of this magnitude would effectively be ten times that of the 1918 influenza pandemic. These values suggest a very high bar for catastrophic risk. . . No published study has suggested the possibility of a singular mass-mortality event of this magnitude, nor is there evidence of an indirect mechanism, such as collapse of global food supplies or climate-mediated pathogenesis, that would result in such high rates of mortality. Even with cumulative losses over a century, mortality would not meet these thresholds.”

The bottom line: Climate change is important and poses significant risks that will require continued policy development and implementation in mitigation and adaptation — but climate change is not an existential risk. The world does indeed face existential risks and we should take care that concern over climate does not overshadow these other risks.

Last night I had the chance to give a talk to a wonderful group of thoughtful and informed normal folks in downtown Denver. After the event a women came up to me and asked if I was afraid of climate change. I responded that I was not, for the simple reason that despite the very real risks of changes in climate, we are focused on those risks. I told her that I worry much more about the things that we are not paying attention to, noting that the COVID-19 pandemic arose following a long period where there was little attention or concern about pandemics among most scientists or policy makers.

In a paper I wrote almost a decade ago, I warned that the catastrophes of the 21st century may — like COVID-19 — come from places not at the center of our attention:

I suggest three types of catastrophes lie ahead. The familiar – hazards that we have come to expect based on experience and knowledge, such as earthquakes and typhoons. The emergent – hazards that are the product of a complex, interconnected world, such as financial meltdowns, supply chain disruption and epidemics. The extraordinary -- hazards that may or may not be foreseen or foreseeable, but for which we are wholly unprepared, such as an asteroid impact, massive solar storm, or even fantastic scenarios found only in fiction, such as the consequences of contact with alien life. I will argue that our collective attention and expertise is, perhaps understandably, disproportionately focused on the familiar. The consequence, however, is a sort of intellectual myopia. We know more than we think about the familiar and less than we should about the emergent and the extraordinary. Yet our ability to deal with the hazards of the future likely depends much more on our ability to prepare for the emergent and the extraordinary.

The first Global Catastrophic Risk assessment by the U.S. government is an excellent starting point for a continuing discussion about catastrophic risks and how we might better prepare for them. It tells us that where our focus lies may not be where we find the greatest risks.

## Exports ADV

### Energy Wars---1NC

#### No impact. Deterrence solves!

Brian Blankenship 24, Assistant Professor of Political Science, University of Miami. Written with Qaraman Hasan, Postdoctoral fellow at Johns Hopkins University School of Advanced International Studies; Soran Mohtadi, Postdoctoral fellow at Johns Hopkins University School of Advanced International Studies; Indra Overland, Research Professor at the Norwegian Institute of International Affairs; and Johannes Urpelainen, Prince Sultan bin Abdulaziz Professor of Energy, Resources and Environment at the Johns Hopkins University School of Advanced International Studies. “Oil Prices and International Conflict: Why Low Oil Revenue May Not Pacify Petrostates,” International Interactions 50.3, 478-505, https://doi.org/10.1080/03050629.2024.2352486

Yet even if their oil wealth enables petrostates with revisionist ambitions to initiate more conflict, on average, than non-petrostates, it does not necessarily follow that the effect of temporal fluctuations in that oil wealth will be in the same direction—that is, that higher oil prices will necessarily mean more petrostate conflict initiation. Constrained resources due to declines to their oil wealth may lead petrostates to go on the offensive in a desperate effort to stave off decline, discourage other countries from preying on their weakness, and distract domestic audiences. This is in effect the inverse of the Emboldenment mechanism, which expects that oil revenue empowers petrostates to initiate conflict because they can. Instead, drops in their oil revenue may compel petrostates to initiate conflict because they feel they must.

Skeptics of the Emboldenment school argue that petrostates have good reason to be cautious about attacking their neighbors. Even if they win, war and any subsequent occupation of conquered territory is costly, and may be especially so for petrostates. Vital oil infrastructure may be damaged due to fighting in contested territory or direct attacks from adversary forces, and any foreign investment that could help rebuild this infrastructure may dry up. Moreover, because petrostates typically depend on their oil exports, they are highly vulnerable to international sanctions imposed as a result of their aggression (Meierding 2020; Jang and Smith 2021). Indeed, if the war goes badly, petrostates risk having their own oil resources conquered by their adversary, which may be even more inclined to seize them when prices are high (Caselli, Morelli, and Rohner 2015).

### Deterrence D---1NC

#### No deterrence breakdown. Adversaries are limited AND lack will.

Dr. Timothy R. Heath 24, PhD, PhD, Senior Researcher, International Defense, RAND, "Conflict in The Age of Fractured Publics," National Interest, 03/03/2024, https://nationalinterest.org/feature/conflict-age-fractured-publics-209826.

As the United States finds itself sliding into conflicts in the Middle East and Ukraine, commentators have invoked the specter of a “Third World War.” The confrontation between the United States and its rivals China, Russia, and Iran has undoubtedly intensified, and the possibility of a broader conflagration cannot be discounted. Nevertheless, real great power conflict is unlikely to resemble the world wars of the twentieth century. The weakness of the participating states stands out as perhaps the defining feature of the current contest. Incapable of carrying out large-scale popular and economic mobilizations, the principal rivals may have little choice but to rely primarily on proxy, information, political, and economic warfare while avoiding large-scale conventional combat.

Although the U.S. economic advantage over all other countries remains undisputed, its political weaknesses have worsened. Polls show that trust in the federal government remains at historic lows, with about 15 percent expressing confidence in the government to “do what is right most of the time.” Acute partisanship has further eroded the president’s ability to act. No crisis in the past two decades has rallied public opinion around the president. Instead, each crisis has merely provided fodder for political factions to rally supporters and lambaste their rivals. The COVID-19 virus killed over a million Americans, for example, yet the pandemic did not draw the country together. Instead, it became another occasion for mutual recrimination and partisan bickering.

China, Russia, and Iran also exhibit equally severe signs of domestic weakness. To bolster flagging support, China’s government relies on relentless repression and indoctrination. Despite these efforts, public support hovers around 50-70 percent and is likely falling as the economy decelerates, prospects dim, and problems of corruption and malfeasance persist. With a shrinking population and mismanaged economy, Russia faces a grim future. Many have voted with their feet, with a million people having fled the country since the war against Ukraine began. Iran’s government remains deeply unpopular and has resorted to brutal violence to suppress waves of popular protests.

The fragile level of public support renders mass mobilization strategies, which leaders at the height of the industrial age practiced, nearly impossible. In World War II, for example, the United States and its allies, including the Soviet Union and the United Kingdom, maintained defense budgets equal to 40 percent of GDP or higher. These expenses were paid for with massive tax increases, especially for those with large incomes. National conscription involving 10-20 percent of the male population swelled armies and enabled them to fight for years on end despite incurring staggering casualties. By contrast, U.S. defense spending peaked at just over 6 percent of GDP during the “global war on terror” following the devastating attacks of September 11. Russian military spending has also peaked at around 6 percent of GDP. Neither country conscripted its citizens in their respective wars. The U.S. military rotated troops back to the Iraq and Afghan theaters after brief respites at home. And despite claiming that the current war in Ukraine is a fight for “Russia’s survival,” Moscow has replenished military losses with convicts as well as poor foreigners drawn by the promise of lavish payouts in the event of a soldier’s death. Aware of the fragility of public support, contemporary countries at war have generally kept taxes low, ensured a steady flow of consumer goods, and placed the burden of warfighting on a tiny minority.

Escalation to major war accordingly looks less and less likely. Geopolitical struggle will likely take a form different from recent world wars. Key differences could include the following:

First, only a small minority of the population may be involved in the contests. The vast majority of the population in each country will remain disengaged or offer, at most, passive support. They may support a military operation, but only so long as they do not have to sacrifice anything for it. About 80 percent of the U.S. public initially backed the wars in Iraq and Afghanistan. However, opposition to conscription or higher taxes to fund the war remained so strong that the U.S. government never brought them up.

Similarly, the Russian public has expressed strong support for the war in Ukraine, but so long as it costs them little. Aware of the fragility of the support, Moscow has carried out limited conscription, mainly drawing from poorer minority regions, while largely sparing the politically important ethnic Russian population. Nor has Putin risked a general war tax on the public. The tenuousness of the public’s support places hard constraints on the ability of governments to scale up competitive efforts or sustain high-intensity war.

Second, weak and divided public support could become a persistent feature of the contest. In the United States, political opposition to support for Israel has soared as Palestinian casualties mounted in the face of bloody Israeli offensives. In Congress, Democrats have been deeply divided over the conflict, with some demanding more support for Palestine while others insist on longstanding obligations to Israel. Political opposition to U.S. support for Ukraine has increased as well. Some lawmakers have balked at the cost of U.S. defense support, which has exceeded $43 billion. Others have demanded more resources be spent on domestic security needs, such as the nation’s southern border.

Nor is the problem confined to the United States. Although harder to see because of their authoritarian politics, America’s rivals face their own problems of divided and weak support for war. All have overseen extensive repression to control expressions of discontent, but signs of opposition still appear. Russian extremist militia groups have attacked their own military, and the neo-Nazi Freedom of Russia militia group openly advocates the overthrow of Vladimir Putin’s government. Opposition to Iran’s foreign policies has grown in ethnic minority regions that sympathize with the targets of Iran’s proxy wars. In December 2023, for example, a group of Iranian Jewish hackers shut down 70 percent of Iran’s petrol stations.

Outside of occasional terror attacks in ethnic minority regions like Xinjiang, China has experienced lower levels of opposition to its foreign policy, but that is mainly due to the fact that the country is not involved in any war. However, support for militarily aggressive policies remains low. Despite the popularity of Taiwan’s unification, for example, the overwhelming majority of surveyed citizens oppose war to achieve that goal. Ambivalence to the state’s policies can be seen in the country’s intensifying tensions with the West. Despite the state’s robust backing of Putin, a small online population openly sympathizes with Ukraine. A handful of Chinese citizens have even enlisted in Ukraine’s military to fight against Russia.

Third, governments will face a strong incentive to fight wars on the cheap. Due to their inability to mobilize the nation’s resources and populations, states may find sustaining high-intensity war especially difficult. After extensive preparation, Russia launched a major invasion of Ukraine. Still, its inability to mobilize resources has left it dependent on conscripted minorities, convicts, and foreigners for recruits and gas sales to fund operations. Incapable of transitioning to a war economy, Moscow has had to purchase arms and ammunition from former clients such as North Korea and Iran. Similarly, the United States withdrew from Iraq and Afghanistan in part due to political controversies over the costs of the operations.

Instead of high-intensity wars, countries may find proxy, information, cyber, and economic warfare more attractive ways to sustain pressure on their adversaries. Proxy wars offer the potential advantage of bleeding a rival without risking high casualties of one’s own military. The use of contractors, state and non-state allies and partners, and unmanned systems will also likely appeal to governments sensitive to the political perils of military casualties and for their relative cost-effectiveness, as contracts can be terminated as soon as the war ends.

Cyber and information operations could become especially important as well due to both the lower cost and potentially higher payoff of targeting disaffected enemy populations. Conversely, the U.S. government may need to commit more resources to counter adversary information operations. Measures that impose economic hardship could be another way to provoke unrest. Resources that address urgent governance concerns will also be essential to mitigate disaffection and thereby undercut the appeals of enemy governments.

The need to ensure domestic security and reduce popular discontent while waging conflict with the involvement of only a tiny minority of the population suggests a new mental framework will be required for the United States to manage the challenges posed by rival states. It is not too early to begin planning and thinking about how to ensure U.S. security in an era of fragile public support.

## Energy ADV

### Turn---1NC

#### US FNPPs self-implode and cause extinction.

Qiuwen Wang et al. 23, School of International Law, East China University of Political Science and Law; Hu Zhang; Puxin Zhu; Jiabei Huang; "Balancing energy security and marine pollution prevention: legal challenges of utilizing nuclear power for decarbonizing maritime transportation in the Arctic region," Environmental Science and Pollution Research, Vol. 31, pp. 404445-40461, 12-17-2023, https://link.springer.com/article/10.1007/s11356-023-31291-0

The legal framework that governs the use of nuclear-powered vessels and platforms in the Arctic region mainly consists of the UNCLOS, conventions that governs maritime transport, and conventions concerning nuclear safety and liabilities. However, regulatory challenges arise not only from each individual legal regime but also from their interaction. While UNCLOS provides a framework for safeguarding the marine environment, it falls short in establishing specific regulatory measures to address nuclear pollution in the ocean. UNCLOS focuses on regulating NPVs’ right of innocent passage through coastal states’ territorial sea (UNCLOS 1982, Articles 22, 23). However, it does not adequately regulate these vessels in other maritime zones outside of the territorial sea, especially in terms of environmental safety and radiative pollution control.

The legal framework governing maritime transport may encounter challenges in dealing with problems in the Arctic due to the region’s distinct geography and climate. Most conventions’ technical standards face obstacles in application since they often fail to account for these unique conditions. For instance, the absence of collision avoidance regulations for “ice-covered areas” and the lack of a standardized training program for vessels’ crew in ice-covered areas impede the effective implementation of the International Convention on the International Regulations for Preventing Collisions at Sea *and the International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers* in Arctic shipping routes. The *International Convention for the Prevention of Pollution from Ships* (MARPOL) does not regulate radioactive discharges from NPVs. Although the 1974 *International Convention for the Safety of Life at Sea* (SOLAS Convention) introduces a special chapter setting safety standards for NPVs, it largely relies on the flag states to implement these safety requirements and the problem of “flag of convenience” can render such regulation ineffective (Wang et al. 2023b). The *International Code for Ships Operating in Polar Waters* does not address specific issues related to NPVs operating in polar regions. At present, there are no international regimes or organizations in place that are capable of sufficiently regulating the nuclear propulsion and adequately overseeing the disposal of radioactive waste in the high seas in the central Arctic Ocean.

When it comes to the legal framework for regulating nuclear safety, the current conventions face several challenges in governing civilian nuclear vessels and nuclear power platforms in the Arctic region. For example, while the *Convention on the Physical Protection of Nuclear Material* offers a framework for safeguarding nuclear materials used for peaceful purposes during international transportation, it only covers the period “beginning with the departure from a facility of the shipper in that State and ending with the arrival at a facility of the receiver within the State of ultimate destination” (Amendment to the Convention on the Physical Protection of Nuclear Material 2021, Article 1). Therefore, the utilization of nuclear power for maritime propulsion purposes may not fall under the purview of this definition if it is strictly interpreted. The Convention on Nuclear Safety only applies to “land-based civil nuclear power plants” and does not cover naval reactors or reactors used for maritime propulsion purposes (Convention on Nuclear Safety 1994, Article 2). The Convention on Early Notification of Nuclear Accident requires member states to provide prompt and detailed notification to other countries and international organizations in the event of nuclear accidents. However, the convention focuses on the occurrence or likelihood of a release of radioactive material that could affect another State, rather than on the prevention or reduction of such a release. It does not require adequate safety measures or precautions to avoid or minimize the risk of accidents of transboundary radiological significance. The *Joint Convention on the Safety of Spent Fuel Management and on the* Safety of Radiation Waste Management does not cover those “spent fuel held at reprocessing facilities as part of a reprocessing activity.” This implies that the convention’s regulatory framework may not adequately cover NPVs that use Generation IV nuclear technology and reprocess spent fuel, if they are developed in the future (Locatelli et al. 2013; Serp et al. 2014; Emblemsvåg 2021).

#### Russia and China are safe.

Richard S. Tierney et al. 20, Former Director for Nonproliferation Policy, U.S. National Security Council; “Revitalizing Nonproliferation Cooperation With Russia and China,” Arms Control Today, November 2020, https://www.armscontrol.org/act/2020-11/features/revitalizing-nonproliferation-cooperation-russia-and-china, ---nws

Russia and China continue to share Washington’s interest in a peaceful, nuclear weapons-free Korean Peninsula, an outcome that would have the benefit, from their perspective, of reducing Washington’s need to respond to North Korean capabilities in a way they would regard as threatening, such as a major buildup of U.S. missile defenses. Finding common ground on a negotiated solution will require the three countries, especially the United States and China, to modify their current positions. For Washington, that means accepting that denuclearization is a long-term, step-by-step process; that Pyongyang will have to be provided meaningful incentives at each step of the way; and that the first step will be a partial measure with no reliable guarantee that the goal of complete denuclearization will eventually be realized.

For Beijing, it means recognizing that it will have to lean heavily on North Korea to get it to accept strict and verifiable measures and that, even if an agreement can be reached that reduces the North Korean threat, the United States and its allies will continue to reinforce their capabilities to deter the North. Russia will need to add its weight to Chinese efforts to encourage more flexible North Korean negotiating behavior. It will also need to work bilaterally with Washington, given their unique arms control experience, to demonstrate to Pyongyang that effective verification measures can be implemented without compromising national security interests.

Revitalizing nuclear security and nuclear energy cooperation. Nuclear security is the most promising area for resuming U.S. cooperation with Russia and China largely because the three countries have a genuine common interest in preventing terrorists from getting their hands on the materials needed to make nuclear weapons or dirty bombs. Moreover, U.S.-Russian reengagement would be facilitated by the long history of cooperation in this area, by the close personal and institutional ties that developed during that long history, and by the apparent desire of technical experts on both sides to resume cooperation. The United States and China do not have the extensive record of nuclear security cooperation shared by Washington and Moscow, but neither do they have the accumulated resentments and internal opposition toward such cooperation that came to bedevil U.S.-Russian nuclear security programs. If U.S.-Russian nuclear security cooperation is to be resurrected, it will have to abandon the past donor-recipient relationship and become a more equal partnership, with both sides sharing best practices rather than Russia simply adopting U.S. practices and with each side able to derive the benefits it seeks.

That means not only pursuing the nuclear security agenda favored by the United States, but also cooperating in the fields of nuclear science and nuclear energy that the Russian nuclear establishment seeks. Furthermore, it would be useful to recognize if not welcome that Russia’s interest in cooperative projects will often depend on its calculation of commercial gain. A study by prominent U.S.- and Russian-based think tanks has recommended an extensive menu of possible future cooperation that includes developing the next generation of safe and reliable nuclear reactors, creating proliferation-resistant nuclear fuels, improving the safety of nuclear power plants, improving nuclear security and accounting technologies, and enhancing nuclear security in other countries embarking on nuclear energy programs.

#### Nuclear terror is impossible

John Mueller & Mark G. Stewart 21, Mueller is Woody Hayes Senior Research Scientist, Mershon Center for International Security Studies, and adjunct professor of Political Science, at Ohio State University, also a Senior Fellow at the Cato Institute in Washington; Stewart is Professor of Civil Engineering and Director of the Centre for Infrastructure Performance and Reliability at The University of Newcastle in Australia, “Terrorism and Bathtubs: Comparing and Assessing the Risks,” Terrorism and Political Violence, vol. 33, no. 1, 01/02/2021, pp. 138–163

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 1.

In recent years, however, critics have attacked what they call “the bathtub fallacy.” 5

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 low 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

Table

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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, bathtubs 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 elevenyear 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, cumbersome, 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.18

There is another aspect to this argument. It is held that, whereas the number of bathtub deaths does not fluctuate much from year to year, terrorism deaths are not very evenly distributed over time and this quality somehow makes the phenomenon unpredictable and unstable. It is a “fat-tailed distribution” in which there are many small events and a few “outliers that are really important.” 19 Thus, we should give up, suggests Bloomberg’s Justin Fox: “Five or 10 or even 50 years of data isn’t necessarily enough to allow one to predict with confidence what is going to happen next year.” 20

The frequency and destructiveness of terrorism and terrorism cases is indeed anything but uniform. In 2016 there were some two dozen cases of Islamist terrorism in the United States and 49 deaths. In 2008 there was only one case and no deaths.21 However, many natural hazards show the same pattern as terrorism. For example, the frequency and destructiveness of tornados range widely: the death count can vary by up to twenty-fold from year to year. Moreover, they are also far more likely than terrorism to kill. However, the lumpiness doesn’t preclude sensible analysis.

Concern about this unevenness, as bathtub critics Justin Fox and Kenneth Anderson both note, stems from a book by Nassim Nicholas Taleb that stesses the importance of extreme events which he calls “Black Swans.” Taleb argues that “almost everything in social life is produced by rare but consequential shocks and jumps” and “our world is dominated by the extreme, the unknown, and the extremely improbable.” 22 However, Taleb’s account focuses on those unexpected and emotion-engaging events and phenomena (like 9/11) that became consequential (and therefore Black Swans), while ignoring ones that failed to do so. It accordingly suffers from what is called “selection bias.” Moreover, insofar as Black Swan events carry an “extreme impact,” this quality derives not so much from their unexpectedness or from the emotions they initially trigger as from the reaction or overreaction they generate. These reactions are sometimes as unexpected as the event itself, and often they do not correlate well with the event’s size or with its objective historical importance. Moreover, although some unexpected and emotion-engaging events do have considerable consequences, much consequential development in human history—probably most of it—stems not from such events, but from changes in thinking and behavior that are decidedly gradual and often little noticed as they occur.23

### Turn---1NC

#### Concede that the plan reassures allies that US commitments are strong and reliable.

#### Concede China war impact.

#### US retrenchment has provided Japan a window of opportunity for conventional rearmament.

Liang Rui and Liu Xuanzun 12-14, Rui, Reporter, Global Times and MDPI, Xuanzun, Defense reporter at the Global Times covering weapons and military development, 12-14-25, “GT Investigates: Historical trajectory warns Japan is approaching dangerous threshold of militarist revival,” https://www.globaltimes.cn/page/202512/1350538.shtml

Yang believes that as Japan's defense budget grows, the expanding defense industry then reinforces government momentum to shift security policy, forming a structural feedback loop.

Externally, Yang said, a sense of geopolitical isolation is also driving Tokyo. "After the Cold War, Washington's shifting strategic priorities caused Japan to question the reliability of its alliance. In response, Japan began emphasizing self-strengthening to gain maneuvering room amid East Asia's evolving power landscape."

Regional security tensions combined with Japan's frequent hype of China's lawful military activities as "threats," have given Tokyo a "convenient justification" for expanding its military presence, Yang said. Global disorder, exemplified by the Russia-Ukraine conflict, has further diverted international scrutiny, offering Japan a "window of opportunity."

#### Japanese conventional rearmament deters a Chinese invasion of Taiwan.

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Japan has gradually embraced military power as one of the central components of its national strategy since the 2010s.38 Especially in the 2020s, Japan’s defense reforms have focused more on ways to generate effective combat power including the acquisition of counterstrike capabilities.39 Tokyo’s upgraded defense strategy is designed primarily for the archipelago state’s territorial defense. Nevertheless, the geographical proximity of Japan’s southwest islands suggests that a military action against Taiwan—either a full-scale invasion or a blockade—would likely have direct consequences for Japan’s national security, including territorial defense.40 As a result, there has been a growing debate on how Japan, alongside the United States, could deter Chinese aggression across the Taiwan Strait.

As US military primacy in the western Pacific erodes, the United States and Japan now operate under a contested space. As a result, instead of relying on military primacy, an approach that focuses on enhancing force survivability and restricting China’s freedom of movement to complicate a war has become a central component of US defense strategy in the region. The different measures taken to implement such an approach to deterrence have broader benefits that contribute to improving the military balance over the Taiwan Strait. The United States and Japan have been investing in measures such as modernizing the alliance’s command and control (C2) structure, fortifying Japan’s Sakishima Islands, and expanding multilateral defense partnerships. These steps could significantly complicate China’s calculus in initiating a full-scale military action against Taiwan, chiefly by denying Beijing the ability to achieve a quick victory or prevail in a protracted war, making a military option unattractive for China. Many of the measures are still at a nascent stage and face political and organizational hurdles for full implementation. Nevertheless, they could all play an important role in shaping Chinese perceptions about the regional military balance across the Taiwan Strait.

#### Invasion goes nuclear.

James H Anderson 24, United States Under Secretary of Defense for Policy; U.S Naval Institute, March 2024, “The Next Taiwan Crisis Will (Almost) Certainly Involve Nuclear Threats,” Vol. 150

A Chinese invasion of Taiwan would prompt a major crisis between China and the United States, with significant repercussions for the Indo-Pacific region and the rest of the world. Such a crisis almost certainly would include implicit or explicit Chinese nuclear threats, despite Beijing’s longstanding no-first-use (NFU) policy. The United States can diminish the potential for China to leverage nuclear threats during a Taiwan crisis, but only if it moves with alacrity to strengthen conventional and nuclear deterrence. The Navy has a key role to play in achieving this goal.

Renewed interest in China’s nuclear program spiked after the 2021 discovery of three new missile fields in north central China. In January 2023, U.S. Strategic Command officially notified Congress that China has more intercontinental ballistic missile launchers than the United States.1 Yet, when it comes to assessing specific Taiwan invasion scenarios, Western analysts often downplay the nuclear dimension. In January 2023, for example, a major Center for Strategic and International Studies Taiwan wargame focused exclusively on conventional warfare, altogether sidestepping the potential for nuclear escalation.2 The Pentagon’s 2023 annual assessment of China’s military power makes a passing reference to the possibility of “nuclear activities” in a Taiwan scenario, but only in the context of a “protracted conflict.”3

NFU Policy

China’s NFU policy is one reason nuclear threats in Taiwan invasion scenarios have not received adequate scrutiny. For decades, China has declared it will never be the first to use nuclear weapons under any circumstances. It would be a mistake, however, to take China’s NFU policy at face value. For starters, predicting China’s behavior in crisis situations is far from an exact science. As Center for a New American Security analyst Jacob Stokes argues, “Decisions with such grand strategic importance are likely to be informed by the worldview of China’s leadership—especially Xi [Jinping] himself for the foreseeable future—in ways that supersede official doctrine or other strategic analysis written by military bureaucracies or analysts.”4

At the very least, a Chinese invasion of Taiwan would provide a major stress test of its NFU policy if the People’s Liberation Army (PLA) struggled to subdue the island with conventional force. Chinese Communist Party (CCP) leaders might even consider failure an existential threat. As defense analyst Mike Sweeney at Defense Priorities put it:

Any battle over Taiwan will not just be a question of territorial aggression but a fight over the core conception of modern China’s soul. And for the leaders who launch such an endeavor, their political futures will hinge on the outcome, as will, possibly, their physical safety and that of their families in the event of failure. Under such circumstances, nuclear use might not be palatable, but it could seem far more plausible if military defeat were to equate to loss of domestic power and possible death anyway.5

It has become conventional wisdom among China watchers that if China’s leaders decide to invade Taiwan, there is nothing anyone can do to change their minds. If true, this provides another reason to consider potential Chinese nuclear threats, since the “stop at nothing” narrative logically entails escalation if conventional means fail to achieve success.

China also could use nuclear threats to dissuade the United States from rendering military assistance to Taiwan during a crisis. Here, it is worth recalling that senior Chinese officials have already issued such threats against the United States, as happened during the Taiwan crisis in 1996 and again in 2005.8 What is more, Chinese military publications and journals have mentioned—on multiple occasions—the potential for nuclear first strikes against the United States as part of various Taiwan invasion scenarios.9