

Polycrisis in the Anthropocene: an invitation to contributions and debates

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Commentary

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Abstract

The popularity of the term polycrisis suggests a growing demand for new thinking about the world's intersecting crises, but loose and haphazard uses of the concept impede knowledge generation. The special issue, 'Polycrisis in the Anthropocene', aims to close the gap. This introductory comment first elaborates upon three key contributions of the lead article 'Global Polycrisis: The Causal mechanisms of Crisis Entanglement': a conceptualization of crisis as systemic disequilibrium; the distinction between the slow-moving stresses and the fast-moving trigger events that interact to generate a crisis; and a grammar with which to map the causality of crisis interactions. The commentary then explores three key debates around the polycrisis concept: Are we in a polycrisis, at risk of a polycrisis, or neither? Is the present polycrisis truly unique and unprecedented? And where are power and agency in a systemic approach to polycrisis? These ongoing debates suggest promising directions for polycrisis research that could feature in this special issue and advance the field of polycrisis analysis.

Non-technical summary. This commentary introduces the special issue 'Polycrisis in the Anthropocene' by elaborating upon three major contributions of its lead article, 'Global Polycrisis: The Causal Mechanisms of Crisis Entanglement', and exploring three key debates surrounding the polycrisis concept. It invites others to contribute to the special issue in order to advance polycrisis analysis, build a community of knowledge and practice, and generate new insights and strategies with which to address the world's worsening crises.

Technical summary. The popularity of the term polycrisis suggests a growing demand for new thinking about the world's intersecting crises, but loose and haphazard uses of the concept impede knowledge generation. The special issue, 'Polycrisis in the Anthropocene', aims to close the gap. This introductory comment first elaborates upon three key contributions of the lead article 'Global Polycrisis: The Causal mechanisms of Crisis Entanglement': a conceptualization of crisis as systemic disequilibrium; the distinction between the slow-moving stresses and the fast-moving trigger events that interact to generate a crisis; and a grammar with which to map the causality of crisis interactions. The commentary then explores three key debates around the polycrisis concept: Are we *in* a polycrisis, *at risk* of a polycrisis, or neither? Is the present polycrisis truly unique and unprecedented? And where are power and agency in a systemic approach to polycrisis? These ongoing debates suggest promising directions for polycrisis research that could feature in this special issue and advance the field of polycrisis analysis.

Social media summary. Inviting contributions and debates to *Global Sustainability* journal's special issue 'Polycrisis in the Anthropocene'.

The term 'polycrisis' has gained widespread currency in discussions of global affairs (e.g. Davies & Hobson, 2022; Tooze, 2022, 2021; UNDP, 2022; WEF, 2023). Its popularity suggests that a growing number of people believe that the world's multiple interacting crises require new ways of thinking and acting. Established approaches that address crises individually cannot contend with their increasing interconnections. But the term 'polycrisis' has been used in such loose and haphazard ways that it is sometimes dismissed as a counter-productive buzzword (e.g. Drezner, 2023; Kluth, 2023). While many scholars and commentators hope this new concept will generate insights, strategies, and policies that better address humanity's interwoven challenges, how it can do so remains unclear.

In the article 'Global Polycrisis: The Causal Mechanisms of Crisis Entanglement' (the lead article of this special issue), my co-authors and I provide substance to the polycrisis concept. The article develops a theoretical framework for polycrisis analysis and proposes an urgent polycrisis research agenda.

We define a global polycrisis as *the causal entanglement of crisis in multiple global systems in ways that significantly degrade humanity's prospects*. The combined harms of these entwined crises are both different than and generally greater than those the crises would produce in isolation from one another. And because it has no single underlying cause, a polycrisis requires strategies that are multi-disciplinary, systemic, and cross-sectoral, as efforts to reduce one problem can easily worsen others.

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On this conceptual foundation, our framework makes three major contributions, each of which requires further scrutiny and development. After elaborating upon these three moves, I introduce three prominent debates in the growing commentary around the polycrisis concept and highlight ways in which these debates suggest promising research directions for polycrisis analysis. This commentary ultimately aims to stimulate others to contribute to the special issue ‘Polycrisis in the Anthropocene’ and help develop the field of polycrisis analysis.

(1) Crisis as systemic disequilibrium

In the first analytical move of our ‘Global Polycrisis’ article, my colleagues and I use critical transitions theory to propose a systems-based conceptualization of global crises. In many natural and social systems, gradual change in a key system parameter (what we call a systemic ‘stress’) erodes the feedbacks that keep the system in one dynamic equilibrium (a familiar range of properties), so that the system abruptly flips to a new equilibrium with a different set of functions, behaviors, characteristics, and feedbacks (Scheffer, 2009; Scheffer et al., 2012).

A system that has left one equilibrium, however, may not immediately settle into a new equilibrium. It is this volatile interregnum that we define as a systemic crisis: an incomplete critical transition in which a global system (such as food, environment, economy, energy, security, governance, transportation, communication, or health) has left one dynamic equilibrium but not yet settled into another (nor returned to its former equilibrium) and is therefore in an unstable state of disequilibrium that generates significant human harms.

For some, this conceptualization is counterintuitive because it focusses on global systems as the entities that go into crisis (i.e. out of equilibrium) rather than those entities more commonly declared to be ‘in crisis’, such as a person, a nation, a market, or the world. By our definition, however, systemic disequilibrium must create harms for these more familiar referents to qualify as a systemic crisis.

In the current geopolitical crisis, for example, the former (albeit weak) consensus among major powers regarding the basic rules of world order – including the prohibition of international aggression, the nuclear taboo, broadly acknowledged hierarchies, and settled spheres of influence – has broken down; major powers now pursue conflicting visions of world order in an era of great technological, ecological, and social transformation. Though often characterized as crises, Russia’s invasion of Ukraine and China’s regional assertiveness represent, in our framework, *manifestations* of this more profound systemic crisis. The geopolitical system is out of equilibrium, generating instability, surprises, conflict, and major suffering.

The value-added of this conceptualization is threefold. First, characterizing crisis as systemic disequilibrium captures the non-linear character of crisis as an abrupt break from normalcy. In a pattern of ‘punctuated equilibrium’, systems get locked-in to a set of arrangements and behaviors for long periods of time, until they reach a ‘critical juncture’ at which existing structures break down and radical change becomes possible (Gould & Eldredge, 1993; Pierson, 2004). As Vladimir Lenin once observed, ‘There are decades where nothing happens; and there are weeks when decades happen’. Our notion of systemic crisis helps explain the unevenness of change.

Second, our conceptualization of systemic crisis helps to distinguish between harms that arise from the normal functioning of a

system and those that arise from the sudden disruption of normal system functioning – that is, from systemic crisis. Nineteenth century imperialism, for example, generated immense human harms, but through the regular functioning of European-dominated geopolitical and economic systems. The Second World War and the struggles for national liberation that followed also created immense human harms – but these harms stemmed from crises in those systems. Global geopolitical and economic systems eventually transitioned to a new equilibrium that included an explosion of (*de jure* but often not *de facto*) independent states, the Bretton Woods institutional order, and informal imperialism (Duara, 2011; Galtung, 1971; Westad, 2005). And this new equilibrium generated its own patterns of harms (such as proxy wars and crippling international debts) through its normal functioning.

Finally, the conceptualization of crisis as an incomplete critical transition raises specific, novel, and productive research questions about global crises:

- What is the relevant system, where are its (albeit fuzzy, open, and shifting) boundaries, and how does it relate to other systems?
- What range of states and behaviors constitute the normal functioning of a system’s equilibrium?
- What feedbacks once maintained an established equilibrium, and why did they cease to do so?
- What events and behaviors indicate that a system is in a state of disequilibrium (i.e. in a systemic crisis)?

These questions can be investigated with a variety of methodologies, qualitative and quantitative. My colleagues and I believe that the answers can help inform new and more effective strategies for crisis prevention and response. They might also reveal the limitations of our systemic crisis approach insofar as it illuminates some problems and harms more than others. It is crucial to note here that any and every definition of ‘crisis’ has political implications concerning whose problems get attention, what sorts of actions are taken, and what harms are simply accepted or ignored.

(2) Stresses and triggers

With our second analytical move, we distinguish between the long-term stresses and fast-moving trigger events that interact with one another to push a system out of its equilibrium and into crisis. Stresses are slow-moving processes – such as increasing socio-economic inequality, climate heating, and demographic change – that gradually, over the course of years and decades, erode the resilience of a system’s equilibrium. Triggers are fast-paced events – such as political uprisings, bankruptcies, or the extinction of a keystone species – that interact with stresses in timespans of seconds to weeks to push a system out of its equilibrium. Stresses create ‘systemic risks’ – possibilities for a problem in one part of a system to spread throughout the system, disrupt its overall functioning, and spill over into other systems (Renn et al., 2019). Trigger events activate those risks into cascading failures.

The distinction between stresses and triggers recognizes the multiple temporalities, scales, and causes of global crises. It is especially important because policymakers and publics alike tend to focus on the most immediate triggers of a crisis while paying too little attention to the underlying stresses that set a system up for disaster. For example, in 2023, amidst Canada’s worst

wildfire season on record, several politicians blamed the fires entirely on lightning strikes and irresponsible campers; they refused to acknowledge the significant role of climate change, which generated dangerously dry conditions and more frequent lightning strikes. Such ‘trigger fixation’ helps politicians shirk their responsibility to fight climate change and improve disaster prevention and response capacities; wildfires will likely grow even more devastating in the years ahead as a result (Lawrence & Homer-Dixon, 2023). The more stressed a system becomes, the more likely it is that some or other trigger event will come along and tip that system into crisis. Stresses lend trigger events their causal efficacy and therefore require close attention.

Wildfires are a fairly straightforward example, but distinguishing stresses, triggers, and crises from one another is seldom an easy task. The distinctions are often open to dispute and may (here as well) be counterintuitive. In Europe during the mid-2010s, for example, massive flows of refugees fleeing war in Syria acted, in our understanding, as the *trigger* of a systemic crisis in the human mobility system, as they overwhelmed camps, humanitarian responses, and borders, and suffered considerably. Underlying stresses included the economic inequality between the global north and south, unrepresentative government in the Middle East, the growth of populism and xenophobia in Europe, and the growing gap between contemporary patterns of migration and the capacities of the international migration regime.

This characterization of the European migration crisis (and other applications of the stress-trigger-crisis distinction) remains debatable. Yet historians and social scientists often make credible distinctions between structural (or ‘root’) causes and the proximate causes of significant historical episodes (such as crises). These disciplines show that diligent investigation can make defensible distinctions like those we draw in our polycrisis framework.

(3) Causal mapping (Domino effects and feedback loops):

Our third analytical contribution is to use stresses, triggers, and systemic crises as the elements of two types of causal maps that trace possible pathways through which global crises can emerge and interact with one another. ‘Domino diagrams’ depict the causal relationships between stresses, triggers, and crises in multiple systems as they unfold over time. The left-to-right temporal logic of these diagrams forms a causal timeline, but relationships can, consequently, only go in one direction. ‘Inter-systemic feedback diagrams’ capture the cyclical and synchronous relationships between stresses, triggers, and crises, wherein effects influence their own causes and thereby create feedback loops (for other insightful applications of causal loop diagrams, see Richards et al., 2021; Thalheimer et al., 2023).

By highlighting relationships between systems that are usually addressed in silos, these causal maps help reveal the processes by which crises cascade and amplify as they entangle multiple systems into a polycrisis. And where the literature on catastrophic and existential risk often focuses on threats that are (or are treated as) exogenous to global systems (such as an asteroid collision, or the emergence of super-intelligent artificial intelligence), these causal maps help to *endogenize* global crises within the internal workings of, and interactions between, global systems. They can help us understand how systems develop rigidities, gain and lose resilience, and create systemic risks as they grow more complex and interconnected.

To be valid and useful, however, such diagrams must make justified causal inferences about the relationships among elements. Many different methods and data sources can be used, but good causal mapping requires additional guidance to gauge the reliability of causal claims, especially as we apply polycrisis analysis to urgent policy challenges. Some of the causal relationships depicted in diagrams of the ‘Global Polycrisis’ article (such as the causes of the Covid-19 pandemic) are well-established in the scientific literature; others (such as the relationship between extreme weather events, mass climate migration, and violent conflict) remain more speculative. And our diagrams, finally, depict only positive feedbacks; the next step is to incorporate the dampening relationships and negative feedbacks that might counteract or restrain the self-reinforcing dynamics of polycrisis.

Debates and open questions

My colleagues and I are confident that these three analytical contributions – a systemic understanding of crisis; the distinction between stresses, triggers, and crises; and tools for mapping the causality of crisis interactions – provide a constructive starting point for polycrisis analysis. But many gaps and questions remain. Here I present the three most prominent debates in recent commentary about polycrisis and suggest ways in which they can be channeled into productive research.

(1) Are we *in* a polycrisis, *at risk* of a polycrisis, or neither?

In the ‘Global Polycrisis’ article, my colleagues and I argue that we are indeed in the midst of a global polycrisis and the situation is worsening. Many commentators agree. Others are more hesitant and treat polycrisis instead as a looming (but not yet realized) threat. The World Economic Forum’s (WEF) press release for its 2023 Global Risks Report, for example, warns that ‘We are on the brink of a “polycrisis”’ and the Report itself considers polycrisis in terms of ‘mid-term futures’ in which present-day risks ‘may collectively evolve into a “polycrisis” centred around natural resource shortages by 2030’ (WEF, 2023, p. 7).

And still others argue we are neither in, nor at risk of, a polycrisis. In the inaugural session of the WEF’s January 2023 annual meeting at Davos, for example, historian Niall Ferguson dismissed the very idea of polycrisis as a ‘mirage’, arguing instead that the world’s present troubles are ‘just history happening’. Economist Noah Smith (2022) proposes that the emerging polycrisis discourse over-estimates the interconnectedness of today’s global problems and that the world economy has a series of buffer mechanisms that temper crisis impacts and help resolve multiple problems. Rebuttals such as these raise the question of what alternative concepts and frameworks would better capture the present moment, what features they emphasize and illuminate, and what aspects they overlook.

(2) Is the present polycrisis truly unique and unprecedented?

Other critics dispute the novelty or uniqueness of the present situation that they understand the polycrisis neologism to imply. They point out that there have been many historical episodes in which multiple crises intertwined with devastating effects, such as the 2008–9 global financial crisis, the economic and energy shocks of the 1970s, the World Wars, the Great Famine in India, the Thirty Years War, the genocide of Native Americans, and the bubonic plague (Ferguson, 2021; Subramanian, 2022).

More provocatively, Kluth (2023) argues that there is nothing fundamentally new in our situation, and that instead of coining new terms we should get back to business as usual by focusing on individual crises separately from one another. At the other extreme, Lähde (2023) asserts that the present polycrisis is so ‘truly unique’ that our ‘ability to learn from history is negligible, because such a concatenation of social, political, economic, and ecological factors has never taken place’.

Others have explored past instances of polycrises with greater rigor in the hopes that lessons can be learned. Daniel Hoyer and his colleagues at the SESHAT World Databank have developed a Crisis Database of 150 historical instances in which societies faced multiple crises. They find that past polycrises generated a wide range of outcomes, from societal collapse to progressive adaptation; and they emphasize the causal role of popular immiseration, elite overproduction and conflict, and state fiscal distress with declining state function (Hoyer et al., 2023). Much more work remains, however, to better understand how societies grow resilient or vulnerable, offering a promising direction for polycrisis analysis.

A historical perspective suggests that our present predicament is not the world’s first polycrisis. But it may still have unique features that distinguish it from past examples and render it unprecedented in significant respects. The WEF argues that the present moment features both ‘older’, more familiar risks (such as inflation, high costs of living, social unrest, geopolitical confrontation, and the threat of nuclear war) alongside relatively new and unfamiliar developments (such as climate change, artificial intelligence, de-globalization, and unsustainable levels of debt) (WEF, 2023, p. 6).

In our ‘Global Polycrisis’ article, my colleagues and I argue that the current situation is unprecedented in the density of global interconnectivity (and its consequent systemic risks) and in the extent to which human activities are exceeding the planetary boundaries of key Earth systems (Homer-Dixon, 2023; Richardson et al., 2023; Rockström et al., 2023, 2009). Historical polycrises did not extend over all the planet’s societies and ecosystems. These conditions notwithstanding, the degree to which the present polycrisis is genuinely unprecedented – and what we can learn from past examples of intersecting crises – remain open questions and promising avenues of research.

(3) Where are power and agency in a systemic approach to polycrisis?

For proponents like Tooze (2022), the concept of polycrisis correctly implies that the world’s intersecting crises have no single underlying cause, and consequently no single solution. Some, however, object that these crises *do* have a unitary fundamental cause. Development critic Güney Işikara (2022), for example, argues that terms like polycrisis that emphasize the ‘complexity of the situation... serve, with or without intention, to conceal the culprit, namely the totality of capitalist relations’. The polycrisis concept and other ‘obscure jargon’ provide a ‘depoliticizing and neutralizing narrative’ in which ‘capitalism at best looms as an imperceptible, shadowy figure in the background, not worth problematizing’ (see also Sial, 2023).

It may be that such critiques use too monolithic and all-encompassing a notion of capitalism and oversimplify the wide variety of causes generating contemporary crises. Even so, these critics raise a more fundamental issue concerning the role of power and agency in systems thinking. In their critique, the abstract language of a complex systems approach helps obscure

the operations of power, interest, and agency at the heart of contemporary crises.

Systems thinking (like many other approaches) tends to focus on structure and requires some degree of abstraction from everyday life. If conducted poorly, such abstraction occludes the politics and agency driving present problems. Simply blaming ‘the system’ and ‘systemic forces’ conceals the actions, inequalities, interests, and forms of power that help generate a crisis; and over-looking agency can produce an unjustified sense of determinism (with its attendant fatalism about solutions). The critics are correct to be concerned.

But systems thinking can also help us better understand the operation of power and agency. Powerful actors often attempt to maintain and expand their power by creating favorable global systems – by shaping the rules of the game to serve their particular interests, for instance. Yet those systems often take on a life of their own and grow beyond the control – and even comprehension – of any actor. System structures shape *who* can possess *what forms* of power – that is, they help select who gets to be powerful – and create agency for some but not others in various aspects of life (Pierson, 2004). This is the essence of Karl Marx’s famous statement that humans are the makers of history, but not in the circumstances of their choosing.

Done badly, systems thinking eliminates power and agency from the picture; done well, systems thinking provides a more thorough understanding of power and agency by highlighting their structural dimensions. It may also reveal high-leverage intervention points where small actions can yield profound and desirable changes (Lenton et al., 2022; Otto et al., 2020; Meadows & Wright, 2008).

Using systems thinking to better understand the role of power and agency in global crises, however, remains a next step for polycrisis analysis. The ‘Global Polycrisis’ article merely hints at the indispensable politics of global crises, but my coauthors and I hope that it provides some helpful leads. To create more equitable and sustainable global systems, we need both a clear understanding of how those systems work and strategies to overcome the vested interests that sustain undesirable systems. ‘Progressive uses of the polycrisis concept’, warns polycrisis analyst Zack Walsh (2023), must expose the underlying drivers of polycrisis ‘and the unjust power relations constituting them, lest the term’s abstraction obfuscate and reinforce those structures of power’. Integrating systemic and political analyses of polycrisis is an open challenge.

With these questions and debates in mind, *Global Sustainability* journal is launching a call for papers for a special issue titled ‘Polycrisis in the Anthropocene’. The editors are soliciting a wide range of contributions – critical, historical, exploratory, practical, empirical, theoretical, and prospective – with the aim of advancing polycrisis analysis, building a community of knowledge and practice, and generating new insights and strategies with which to address the world’s worsening crises.

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