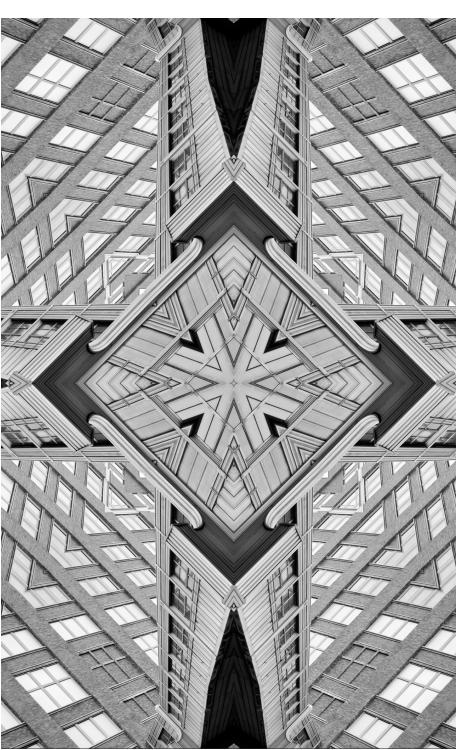


Issue Brief

ISSUE NO. 551 JUNE 2022



© 2022 Observer Research Foundation. All rights reserved. No part of this publication may be reproduced, copied, archived, retained or transmitted through print, speech or electronic media without prior written approval from ORF.



The Emerging Domains of Conflict in the 21st Century

Lydia Kostopoulos

Abstract

Human civilisation is at a new moment of transition across social norms, economics, governance, and the environment, and is facing the dawn of a new era of interplanetary human migration (to Mars). In the future, historians will look to the first half of the 21st century to tell the story of how these changes started and unfolded through five domains of conflict. These domains touch on the unravelling of governance structures in need of modernisation; rising tension between supranational entities exercising sovereignty in their digital lands while challenging traditional Westphalian models of sovereignty based on physical land; the democratisation of arms, both physical and digital; human commerce, security, and migration in outer space; and environmental constraints affecting human survival on earth.



he first quarter of the 21st century has seen tremendous change due to the internet reaching critical mass and accelerated technological advancements across several key fields of science, namely computer science, artificial intelligence (AI), nanotechnology, batteries, biology, and physics. The convergence of these technologies has exponentially furthered the knowledge, capability, and understanding of DNA, microbiome, solar system, renewable energy capture, social sentiment, industrial design, and much more.

With technological change comes social change and a shift in the organising systems that oversee how communities are governed. Humankind can feel the tectonic plates shift under the grounds of our sociopolitical and economic norms. As in the past, technological change came with an unsettling period of confusion and conflict until the new organising systems emerged. Today, humankind is in the middle of the eye of the storm of this shift and there is much confusion and conflict as the world comes to terms with new technology, social norms, evolving values, and competing new power structures.

This brief highlights five emerging domains of conflict that will characterise the remainder of the first half of the 21st century. They are:

- Nation-state governance tensions: Conflict derived from democracy's need to modernise its value proposition and autocracy's modern struggles with control
- Environmental constraints: Climactic changes are forcing migration, exacerbating conflict and resource scarcity, and fanning the flames of 'environmental nationalism'
- Continued friction with pervasive supranational tech governance structures: The friction between supranational corporate governance and sovereign state governance will increase with Web 3.0 and the spatial web. Distributed Autonomous Organisations (DAOs) and cryptocurrencies will also challenge governance structures with parallel economies and organising systems
- Non-state interest-based arms: The marketplace for organised corporate
 mercenaries or crowdsourced voluntary conscripts offering financial means,
 technological offensive capabilities, or traditional kinetic violence which can
 be leveraged in the cause of an interest-best conflict is growing



• Contentious space: As more entrepreneurs pursue and develop commercial interests in space, there will be tension between countries and companies to regulate and create standards. Separately, space weapons continue to threaten peace in space and debris pose threats to a congested environment of vital space assets.

A common thread that weaves through these emerging domains of conflict is that they all challenge the Westphalian model of state sovereignty that has been the core foundation of the modern international system. As technology, space, and climate challenge the limits of state sovereignty, there is more at play than just emerging domains of conflict but the prospect of a new power shift in the way states have organised themselves. How this prospect unfolds and what it will morph into remains unknown, however, the broader emerging domains of conflict discussed in this brief help paint the new picture that is emerging.

The convergence of several key technologies has exponentially furthered the knowledge, capability and understanding of DNA, microbiome, the solar system, renewable energy capture, social sentiment, industrial design, and much more.



Nation-State Governance Tension

he 2008 economic crisis continues to have ripple effects in today's tensions on inequality, challenges within middle and lower economic classes, loss of confidence in the future, and distrust in the government. Since 2008, the economic power of the middle class in western liberal democracies has shrunk or remained stagnant, while faith in democratic institutions has been challenged. This can be seen in divisive politics in the United States, particularly during the Trump Presidency; in the United Kingdom, with both the Scottish and Brexit referendums; and in Germany, with the far-right populist party Alternative für Deutschland. In authoritarian countries, technology has simultaneously proven to be a tool of oppression—with the rising use of surveillance technologies and AI—and one of hope and liberation—for those living under oppression—as gaming, digital currencies, the metaverse, digital anonymity tools, and access to education online has given them new ways to earn an income, participate in new digital economies, and gain knowledge and skill sets that they would otherwise not have access to.

Whether it is an authoritarian or a democratic form of governance, both systems—as they are practiced today—are being challenged. Many regulatory norms and laws still represent a bygone era, technology has created new power structures that policymakers are still grappling with and societies are rapidly upending and rewriting new norms.

Researchers of the impacts of disruptive technology, Tony Seba and James Arbib, deconstruct this in their book, *Rethinking Humanity*.² They argue that as a civilisation advances and its population grows, its organising system must adapt to meet the new demands of the civilisation. If it does not—and the organising system is no longer fit for purpose—a dark age ensues where there is conflict and reduced or stalled productivity, until a new and more compatible organising system emerges. Seba and Arbib have observed that "Throughout history every civilization has been built on the same five foundational sectors: information, energy, transport, food and materials. When technologies disrupt any of these change ripples and cascades challenging our rules, systems and mindsets."³

Today, in 2021, humankind are precisely in this moment of change. All five of these foundational sectors have seen rapid change in just the past decade alone. Liberal democracies, monarchies, or authoritarian governance structures are facing a reality of changing foundations across technological imperatives and the minds of their constituencies.



Environmental Constraints

o deny climate change a spot on the list of emerging domains of conflict is to be truly misinformed on the multiplying climate conflicts and challenges that humans are already collectively experiencing. Today, the earth is 1.2 degree Celsius warmer than the pre-industrial levels and while the 1.5-degree Celsius Paris Agreement limit has not been reached, there are already several noticeable changes. The 2022 Intergovernmental Panel on Climate Change report has warned that the changes to the environment are taking place faster than governments, institutions, and people are able to adapt.

Just in the first two years of the 2020s, Australia saw the worst bushfire season with over 46 million acres being burned, equating to the entire landmass of Syria.⁶ The following year, Germany, Austria,⁷ the Netherlands, and China⁸ experienced torrential rain and mass flooding that caused landslides, damage to infrastructure, and loss of life. At the beginning of 2022, at the time of writing this paper, both the Arctic and Antarctica are experiencing heatwaves with 30 degrees Celsius and 40 degrees Celsius, respectively, above normal.⁹ This is not withstanding the European heatwaves, since the deadly 2003 heatwave, which continue to claim hundreds of lives each year.¹⁰

Changing planetary ecosystems are causing extreme environmental events that have implications for the environment, food supply chains, human life, and in return, implications for the economy and politics. Droughts and floods have destroyed arable land and caused farmers and communities in Bangladesh¹¹ and Senegal¹² to move to safer and more resource-abundant lands; while in the Middle East, conflict over scarce water resources between Iran and Iraq is becoming increasingly more contentious as "Iran is building dams to redivert... water, causing alarm and creating major water shortages for Iraq."¹³

The number of climate refugees leaving their country for more environmentally prosperous and resource-abundant countries is a trend that is growing. ¹⁴ This migration has compounded existing immigration tensions in the countries they seek to find new homes. According to the United Nations High Commissioner for Refugees, "Hazards resulting from the increasing intensity and frequency of extreme weather events, such as abnormally heavy rainfall, prolonged droughts, desertification, environmental degradation, or sea-level rise and cyclones are already causing an average of more than 20 million people to leave their homes and move to other areas in their countries each year." ¹⁵



These 20 million climate refugees require homes, jobs, and resources in the new countries they have immigrated to, which at times places constraints on the existing resources. Within subsets of some communities, this is breeding a new form of nationalism—environmental nationalism—where protectionist nationalism encompasses protecting access to valuable environmental resources within the territorial sovereignty, and excluding foreigners who may threaten their access to these resources.^a

Last, but certainly not the least—regardless of where one stands in the globe, whether it is a water-rich area or one with annual wildfires—"climate change is already damaging the physical and mental health of everyone on Earth, with half of humanity already vulnerable to water insecurity and billions more at risk of extreme heat events, vector-borne diseases and hunger linked to global heating."¹⁶

The changes in climate and the planet's environment brings an emerging domain of conflict that traverses fundamental resource scarcity, exacerbates existing conflicts while creating new political tensions, contributes to more refugees, and impacts the health of all. It is a domain of conflict that individuals, politicians, and businesses must urgently work together on.

Changing planetary
ecosystems are causing
extreme environmental events
that have implications for
the environment, food supply
chains, human life, and in
return, implications for the
economy and politics.

Environmental nationalism differs from eco-nationalism, in that eco-nationalism is a political movement to protect and preserve the environment of a nation. While environmental nationalism refers to the politics of denying foreigners immigration in efforts to preserve access of the environmental resources to people of a nation.

Governance Structures Continued Friction with Pervasive Supra-National



he friction between supra-national corporate governance and sovereign state governance will increase with the rise of Web 3.0, the spatial web, smart infrastructure, and AI. The Westphalian model is once again challenged with the evolution of technology. But in this emerging domain of conflict, it is not about an outdated organisation system of governance; instead, it is about the emergence of a non-state governance structure that crosses over international sovereign boundaries and mediates the lives of billions of people—supra-national Big Tech.

The Big Tech platforms—such as Facebook, Google, Amazon, Uber, Airbnb, Apple, and others emerging in the metaverse space—are technological critical infrastructure that much of the world and global economy relies on. This challenges the sovereign state to contend with a pervasive supra-national tech governance structure that, in some circumstances, wields power that was once only privy to sovereign nations. The Ukraine-Russia war has countless multinational companies as well as supra-national tech companies impose their own economic restriction measures and take sides in this political conflict with economic consequences for many people living in Russia.¹⁷ In doing so, supranational companies have joined the international political arena in ways that were never before so swift and politically consequential.

In parallel to this, smart infrastructure, digital twins, and millions of new Internet of Things devices are getting connected to the internet. This digital infrastructure has a virtual overlay of the physical world. This is most illustrative with digital twins where factories, critical infrastructures, and entire cities have digital twin copies where services can be rendered, commerce can take place, and advertising can be placed on the digital layer of the physical geography. This is also a place for corporations to dictate terms, bringing widespread implications for governance, commerce incentivisation, protections of marginalised people, and socio-economic access.

Questions arise such as who owns and runs the digital twin of a city; is it collectively owned; are parts of it privately owned like parts of the physical space are; and who polices the digital twin of a city when there are many 'worlds' and service layers on top of it? Smart cities, algorithms, and digital twin economies will be contentious spaces for the state sovereign and the supra-national tech entities that govern these virtual spaces. If supra-national tech is able to pull

Governance Structures Continued Friction with Pervasive Supra-National Tech



out from a country or service at their own discretion, sovereign states will need guaranteed securities for their citizens in these virtual spaces for the stability of their economies.

Separately from corporate supra-national tech governance structures, there are non-corporate governance structures that are emerging, thanks to distributed ledger technologies. The blockchain is an example of a distributed ledger which has allowed for cryptocurrencies and DAOs. Both cryptocurrencies and DAOs do not need a third-party trust entity or a bureaucracy to deliver services; instead, it is the collective community that manages the ledger. These technologies are being leveraged to operate outside the international FIAT currency system and to create transparent supra-national governance structures through DAOs where people can opt in to the coded rules. Some are using them to create companies, unions, or social clubs, and others see it as the next form of government. This is an emerging area of technology governance conflict as DAOs do not need state registration to be created or approved. If sovereign states cannot manage to regulate and weave this technological infrastructure into the evolving contemporary society, it will continue to be a growing area of tension.

Much of the world and global economy rely on the Big Tech platforms, which are technological critical infrastructure. This challenges the sovereign state to contend with a pervasive supra-national tech governance structure that, in some circumstances, wields power that was once only privy to sovereign nations.



Non-State Interest-Based Arms

n underappreciated area of contemporary conflict is the thriving and growing marketplace for a full spectrum of political interest-based support. Whether it is corporate mercenaries, or crowdsourced voluntary conscripts providing technological offensive capabilities or traditional kinetic capabilities, or those providing financial support through crowdfunding, the space of cause related interest-based conflict support is growing.

Sean McFate, author of *The New Rules of War*, argues that humans live in a state-centric world that is slowly eroding and while "states won't go away, they will become less important because war is now divorcing from the state and technology is a huge enabler of this and that will change international relations in the next thirty years profoundly." He points out that the private sector of armed mercenaries is growing and working collaboratively with private sector intelligence companies, which is also a market that is growing. When non-state special operations teams are hired, new dynamics are created in the international arena—separate from nationalism and state interests—that open a new political market where non-state interests can be defended through private intelligence and private warriors. However, the plot of mercenaries thickens as nation-states also utilise arms for hire, to supplement missions or to mask actions in ways that will not be directly linked to the government. The rise of private intelligence and mercenaries will further complicate international politics and decision-making.²⁰

However, there is another non-state warfare market and its currency is not money, but emotions. The Ukraine-Russia war has showcased what it looks like when citizens all around the world choose on their volition to participate in a conflict and take sides. Over US\$100 million have been raised from around the world in support of Ukraine in cryptocurrency alone,²¹ and many have creatively used Airbnb to make their donations, raising over US\$2 million.²² Foreign urban warfare experts have provided detail guidance on Twitter for Ukrainian fighters,²³ and over 20,000 people have flown in to Ukraine to volunteer in the International Legion of Territorial Defense of Ukraine to defend a country that is not their own.²⁴ Cyber hacking groups have rallied in defence of Ukraine, providing cyber defence and offensive support.²⁵



Non-State Interest-Based Arms

These examples demonstrate how technology has created an asymmetry for participation in a conflict and how regardless of nationality, race, or religion, any individual around the world can rally resources and support in defence of interests they align with and support their side of the political conflict with money, resources, time, and expertise.

This will not be the last political conflict that sees non-state interest-based support and we will see an empowered individual who will use their means to support causes, regardless of their national borders.

The Ukraine-Russia war has showcased what it looks like when regardless of nationality, race, or religion, citizens around the world choose on their volition to participate in a conflict and take sides.



uter space has seen a resurgence in interest from political, military, and economic fronts. Politically, there has been more interest in creating human settlements on Mars to make humans a multi-planetary species²⁶ with Russia, the US, China, and the United Arab Emirates²⁷ conducting human settlement research for Mars. Militarily, the development, testing, deployment, and proliferation of space weapons²⁸ continues, which is in conflict with the Outer Space Treaty that "bans the stationing of weapons of mass destruction (WMD) in outer space, prohibits military activities on celestial bodies, and details legally binding rules governing the peaceful exploration and use of space." Economically, there has been a boom for commercial interest in space with countless entrepreneurs pursuing space ventures. ³⁰

All this space activity is creating several areas of conflict as entrepreneurship and commercial interests in space will cause tensions between countries and companies to regulate and create standards that allow for space prosperity while respecting it as a 'global common'. Notwithstanding the long running problem of space debris, which continues to pose threats in a congested environment of valuable and critical space assets.³¹ Countries and companies will need to work together to protect space assets that are critical to economies on earth. If not, Low Earth Orbit will soon become a dangerous object-polluted place to operate in and space related activity will need to move to higher orbits.

Separately, space weapons continue to threaten peace,³² prompting the United Nations to approve an "open-ended working group aimed at preventing an arms race in space"³³ and avoiding 'celestial conflict'.³⁴ This domain of conflict is not exclusive to space as it has real implications on planet earth and foresight, collaboration, and diplomacy will be needed to prevent conflict.



hese five emerging domains of conflict will grow in the coming decades and, if not managed by the middle of the 21st century, will become entrenched and compounded conflicts. Whether it is climate change affecting health, migration, food supply chains, or access to vital resources such as water, the impact of the environment on politics, society, and economy will be felt pervasively by 2050. Outer space is not only an area where critical infrastructure resides for the many space-reliant technologies, but it is also a frontier for human exploration. It will be up to the collaboration of nation-states and space companies to make space an area full of opportunity, prosperity, and hope and not one of danger, conflict, and profiteering. As the Westphalian model sunsets, a new model will emerge, and while it may be too soon to label it, some of its characteristics can already be seen. Some notable ones are that the sovereignty of nation-states is morphing into a shared sovereignty with supranational technology platforms and companies, that more and more decision-spaces of human lives will be algorithmically mediated, and the actors in any given conflict will be varied borderless interest-based actors rather than strictly nation-based actors.

To anticipate and interpret the emerging domains of conflict as they unfold in the coming decades, humankind will need to unlearn many of the ways it has understood the international area to operate, and be open to observe the new ways in which value is created and the emerging power structures that arbitrate them.

ORF

This brief was first published as part of the Raisina Files 2022.

Lydia Kostopoulos is Adjunct Faculty, US Joint Special Operations University



- Tony Seba and James Arbib, Rethinking Humanity: Five Foundational Sector Disruptions, the Lifecycle of Civilizations, and the Coming Age of Freedom, (RethinkX, 2020), https://www.rethinkx.com/humanity.
- 2 Seba and Arbib, Rethinking Humanity: Five Foundational Sector Disruptions, the Lifecycle of Civilizations, and the Coming Age of Freedom
- Rethink X, "Rethinking Humanity," Rethink X Channel, YouTube video, 4:04 min, May 28, 2021, https://www.youtube.com/watch?v=732kBAodPqU
- 4 "2100 Warming Projections," Climate Action Tracker, https://climateactiontracker.org/global/temperatures/.
- Brad Plumer and Raymond Zhong, "Climate Change Is Harming the Planet Faster Than We Can Adapt, U.N. Warns," *The New York Times*, February 28, 2022 https://www.nytimes.com/2022/02/28/climate/climate-change-ipcc-report.html.
- 6 "2019-2020 Australian Bushfires," Center for Disaster Philanthropy, https://disasterphilanthropy.org/disaster/2019-australian-wildfires/.
- Richard Davies, "Austria and Germany More Deadly Flash Floods After Heavy Rain," *Floodlist*, July 16, 2021, https://floodlist.com/europe/austria-germany-bavaria-floods-july-2021.
- Vincent Ni China and Helen Davidson, "Death toll rises and thousands flee homes as floods hit China," *The Guardian*, July 21, 2021, https://www.theguardian.com/world/2021/jul/20/heavy-flooding-hits-central-china-affecting-tens-of-millions.
- 9 Seth Borenstein, "Hot poles: Antarctica, Arctic 40 and 30 degrees Celsius above normal," PHYS.org, March 19, 2022, https://phys.org/news/2022-03-hot-poles-antarctica-arctic-degrees.html.
- Richard C. Keller, "Europe's killer heat waves are a new norm. The death rates shouldn't be.," *The Washington Post*, July 26, 2019, https://www.washingtonpost.com/outlook/2019/07/26/europes-killer-heat-waves-are-new-norm-death-rates-shouldnt-be/.
- 11 "Climate change lessons from Bangladesh's disappearing farms," Ohio State Insights, https://insights.osu.edu/sustainability/global-climate-change.
- 12 "Desertification: The people whose land is turning to dust," *BBC*, November 12, 2015, https://www.bbc.co.uk/news/world-africa-34790661.
- 13 Banafsheh Keynoush, "Water scarcity could lead to the next major conflict between Iran and Iraq," Middle East Institute, March 18, 2021, https://www.mei.edu/publications/water-scarcity-could-lead-next-major-conflict-between-iran-and-iraq
- "Why Mass Migration Is A Given Parag Khanna In Conversation With Nitin A. Gokhale," StratNewsGlobal, YouTube video, 21:18 min, October 11, 2021, https://www.youtube.com/watch?v=PRUTOzZRzsw.



- 15 "Climate change and disaster displacement," United Nations High Commissioner for Refugees (UNHCR) https://www.unhcr.org/en-us/climate-change-and-disasters.html.
- Patrick Galey, "Five takeaways from the UN's 2022 climate impacts report," *Climate Home News*, February 28, 2022, https://www.climatechangenews.com/2022/02/28/five-takeaways-from-the-uns-2022-climate-impacts-report/.
- 17 "Over 600 Companies Have Withdrawn from Russia—But Some Remain," Yale School of Management, https://som.yale.edu/story/2022/over-500-companies-have-withdrawn-russia-some-remain.
- Sonal Chokshi, Zoran Basich, Guy Wuollet, "Decentralized Autonomous Organizations (DAOs) Canon, "Future, https://future.a16z.com/dao-canon/.
- Think JSOU, "JSOU SOF Q4 Forum 2021 Panel 4: Emergent Tech and the Compound Security Environment," YouTube video, 1:21:22 min, September 17, 2021, https://www.youtube.com/watch?v=Bu2qwykYjos.
- 20 Sean McFate, Mercenaries and Privatized Warfare Current Trends and Developments, Washington DC, The Atlantic Council, 2020, https://www.ohchr.org/sites/default/files/Documents/issues/Mercenaries/WG/OtherStakeholders/sean-mcfate-submission.pdf.
- 21 Amitoj Singh, "Ukraine Has Received Close to \$100M in Crypto Donations," *CoinDesk*, March 10, 2022, https://www.coindesk.com/business/2022/03/09/ukraine-has-received-close-to-100-million-in-crypto-donations/.
- Laurel Wamsley, "People are booking Airbnbs in Ukraine not to stay, but to lend their support," NPR, March 5, 2022, https://www.npr.org/2022/03/05/1084739721/airbnb-ukraine-direct-aid.
- 23 Max Hauptman, "Urban warfare expert offers Ukrainians tips on battling Russians in close combat," *Task & Purpose*, February 28, 2022, Task & Purpose. https://taskandpurpose.com/news/urban-warfare-expert-offiers-ukraine-tips-battling-russia-urban-combat/.
- 24 Andy Blatchford, "Band of others: Ukraine's legions of foreign soldiers are on the frontline," *Politico*, March 24, 2022, https://www.politico.com/news/2022/03/24/ukraine-legion-foreign-soldiers-00020233.
- Blair Robinson, "Hackers Target Russia in Support Of Ukraine," *The National Law Review*, March 4, 2022, https://www.natlawreview.com/article/hackers-target-russia-support-ukraine.
- Joshua E. Duke, "Conflict and Controversy in the Space Domain: Legalities, Lethalities, and Celestial Security," Air University, https://www.airuniversity.af.edu/Wild-Blue-Yonder/Article-Display/Article/2362296/conflict-and-controversy-in-the-space-domain-legalities-lethalities-and-celesti/.
- 27 "Emirates Mars Mission," UAE Space Agency, https://www.emiratesmarsmission.ae.



- Bob Preston et al., "Chapter 3: Kinds and Capabilities of Space Weapons," in Space Weapons Earth Wars, (RAND Corporation 2002), 23-50, https://www.jstor.org/stable/10.7249/mr1209af.11?seq=1.
- 29 Daryl Kimball, "The Outer Space Treaty at a Glance: Fact Sheets & Briefs," Arms Control Association, https://www.armscontrol.org/factsheets/outerspace.
- Matt Weinzierl and Mehak Sarang, "The Commercial Space Age Is Here: Private space travel is just the beginning," *Harvard Business Review*, February 12, 2021, https://hbr.org/2021/02/the-commercial-space-age-is-here.
- Jonathan O'Callaghan, "What is space junk and why is it a problem?," Natural History Museum, https://www.nhm.ac.uk/discover/what-is-space-junk-and-why-is-it-a-problem. html.
- 32 SIPRI, "Offence-defence race in space: Missile defence, anti-satellite weapons and nuclear arms control," YouTube video, 1:12:15 min, December 15, 2021, https://www.youtube.com/watch?v=aevVi5UC1bU.
- Mary Ann Hurtado, "UN Panel Approves Working Group on Space," Arms Control Association, https://www.armscontrol.org/act/2021-12/news/un-panel-approves-working-group-space.
- 34 United Nations General Assembly, https://www.un.org/press/en/2018/gadis3609.doc.htm.

