# 1NC

## 1

**Interpretation: The affirmative must defend a prescriptive policy action**

**Resolved means policy action**

**Louisiana State Legislature** (https://www.legis.la.gov/legis/Glossary.aspx) Ngong

A legislative instrument that generally is used for making declarations, stating policies, and making decisions where some other form is not required. A bill includes the constitutionally required enacting clause; a resolution uses the term "resolved". Not subject to a time limit for introduction nor to governor's veto. ( Const. Art. III, §17(B) and House Rules 8.11 , 13.1 , 6.8 , and 7.4 and Senate Rules 10.9, 13.5 and 15.1)

**Unjust demands legal action**

**The Law Dictionary, ND**, Def of Unjust, URL: <https://thelawdictionary.org/unjust/>

Contrary to right and justice, or to the enjoyment of his rights by another, or to the standards of conduct furnished by the laws.

**Vote neg for ground–all counterplans and disads based on consequences become irrelevant if you don’t defend a policy action e.g. no process counterplans or discussions of real world mechanisms like the OST and Moon Treaty, no politics if there’s no actor, etc--core political discussions are necessary to understand real world legislative processes and spark educational discussions for political awareness, anything else means they can just shift to take out of ground and take out core topic discussions**

**Fairness and education are voters – debate’s a game with portable skills**

**Drop the debater–T indicts the whole aff and no arg to drop on spec**

**No rvi–shouldn’t win for being fair and incentivizes baiting just to beat it back with infinite prep while chilling t/theory since you’ll out frame us and auto-win on 2ar ethos each round**

**Competing interps–reasonability is arbitrary and causes a race to the bottom–finding the best model of debate is key to preserve the most substantive norms in the long terms but no frivolous race to the top since limited words in the res mean limited interps**

**NC theory first–abuse was reactive so they were the root cause**

## 2

**Interp: The affirmative must define appropriation with a delineated text in the 1AC**

**Pershing 19**, Abigail D. "Interpreting the Outer Space Treaty's Non-Appropriation Principle: Customary International Law from 1967 to Today." Yale J. Int'l L. 44 (2019): 149. (Robina Fellow at European Court of Human Rights. European Court of Human Rights Yale Law School)//Elmer

Though the Outer Space Treaty flatly prohibits national appropriation of space,150 it leaves unanswered many questions as to what actually counts as appropriation. As far back as 1969, scholars wondered about the implications of this article.151 While it is clear that a nation may not claim ownership of the moon, other questions are not so clear. Does the prohibition extend to collecting scientific samples?152 Does creating space debris count as appropriation by occupation? While the answers to these questions are most likely no, simply because of the difficulties that would be caused otherwise, there are some questions that are more difficult to answer, and more pressing. As commercial space flight becomes more and more prevalent,153 the question of whether private entities can appropriate property in space becomes very important. Whereas once it took a nation to get into space, it will soon take only a corporation, and scholars have pondered whether these entities will be able to claim property in space.154 Though this seems allowable, since the treaty only prohibits “national appropriation,”155 allowing such appropriation would lead to an absurd result. This is because the only value that lies in recognition of a claim is the ability to have that claim enforced.156 If a nation recognized and enforced such a claim, this enforcement would constitute state action.157 It would serve to exclude members of other nations and would thus serve as a form of national appropriation, even though the nation never attempted to directly appropriate the property.158 Furthermore, the Outer Space Treaty also requires that non-governmental entities must be authorized and monitored by the entities’ home countries to operate in space.159 Since a nation cannot authorize its citizens to act in contradiction to international law, a nation would not be allowed to license a private entity to appropriate property in space.160 While this nonappropriation principle is great for allowing free access to space, thereby encouraging research and development in the field, it makes it difficult to create or police a solution to the space debris problem. A viable solution will have to work without becoming an appropriation. There is, however, very little substantive law on what actually counts as appropriation in the context of space.161 So, the best way to see what is and is not allowed is to look both at the general international law regarding appropriations and to look at the past actions of space actors to see what has been allowed (or at least tolerated) and what has been prohibited or rejected.

**The net benefit is shiftiness – vague plan wording wrecks Neg Ground since it’s impossible to know which arguments link given different types of appropriation like mining, space col, satellites, and tourism – the 1AR dodges links by saying they don’t affect particular types of appropriation, or they don’t reduce private appropriation enough to trigger the link. Cx doesn’t check–it’s non verifiable and skews preround prep–they get away with abuse no risk justifying infinite abuse BUT no regress since the interp is grounded in the lit and limited words in the res mean limited interps**

## 3

**Commercial Space Race favors American Companies that cements space dominance – shift away endangers our lead – losing green-lights Chinese Dominance across the board.**

**Autry and Kwast 19** Greg Autry and Steve Kwast 8-22-2019 "America Is Losing the Second Space Race to China" (Greg Autry, a clinical professor of space leadership, policy, and business at Arizona State University’s Thunderbird School of Global Management, and Steve Kwast)//Elmer

America Is Losing the Second Space Race to China The private sector can give the United States a much-needed rocket boost. The current U.S. space defense strategy is inadequate and on a path to failure. President Donald Trump’s vision for a Space Force is big enough. As he said on June 18, “It is not enough to merely have an American presence in space. We must have American dominance in space.” But the Air Force is not matching this vision. Instead, the leadership is currently focused on incremental improvements to existing equipment and organizational structures. Dominating the vast and dynamic environment of space will require revolutionary capabilities and resources far deeper than traditional Department of Defense thinking can fund, manage, or even conceive of. Success depends on a much more active partnership with the commercial space industry— and its disruptive capabilities. U.S. military space planners are preparing to repeat a conflict they imagined back in the 1980s, which never actually occurred, against a vanished Soviet empire. Meanwhile, China is executing a winning strategy in the world of today. It is burning hard toward domination of the future space markets that will define the next century. They are planning infrastructure in space that will control 21st-century telecommunications, energy, transportation, and manufacturing. In doing so, they will acquire trillion-dollar revenues as well as the deep capabilities that come from continuous operational experience in space. This will deliver space dominance and global hegemony to China’s authoritarian rulers. Despite the fact that many in the policy and intelligence communities understand exactly what China is doing and have been trying to alert leadership, Air Force leadership has convinced the White House to fund only a slightly better satellite command with the same leadership, while sticking a new label onto their outmoded thinking. A U.S. Space Force or Corps with a satellite command will never fulfill Trump’s call to dominate space. Air Force leadership is demonstrating the same hubris that Gen. George Custer used in convincing Congress, over President Ulysses S. Grant’s better experience intuition, that he could overtake the Black Hills with repeating rifles and artillery. That strategy of technological overconfidence inflamed conflict rather than subduing it, and the 7th Cavalry were wiped out at the Battle of the Little Bighorn. The West was actually won by the settlers, ranchers, miners, and railroad barons who were able to convert the wealth of the territory itself into the means of holding it. They laid the groundwork that made the 20th century the American Century and delivered freedom to millions of people in Europe and Asia. Of course, they also trampled the indigenous people of the American West in their wake—but empty space comes with no such bloody cost. The very emptiness and wealth of this new, if not quite final, frontier, however, means that competition for resources and strategic locations in cislunar space (between the Earth and moon) will be intense over the next two decades. The outcome of this competition will determine the fate of humanity in the next century. China’s impending dominance will neutralize U.S. geopolitical power by allowing Beijing to control global information flows from the high ground of space. Imagine a school in Bolivia or a farmer in Kenya choosing between paying for a U.S. satellite internet or image provider or receiving those services for free as a “gift of the Chinese people.” It will be of little concern to global consumers that the news they receive is slanted or that searches for “free speech” link to articles about corruption in Western democracies. Nor will they care if concentration camps in Tibet and the Uighur areas of western China are obscured, or if U.S. military action is presented as tyranny and Chinese expansion is described as peacekeeping or liberation. China’s aggressive investment in space solar power will allow it to provide cheap, clean power to the world, displacing U.S. energy firms while placing a second yoke around the developing world. Significantly, such orbital power stations have dual use potential and, if properly designed, could serve as powerful offensive weapons platforms. China’s first step in this process is to conquer the growing small space launch market. Beijing is providing nominally commercial firms with government-manufactured, mobile intercontinental ballistic missiles they can use to dump launch services on the market below cost. These start-ups are already undercutting U.S. pricing by 80 percent. Based on its previous success in using dumping to take out U.S. developed industries such as solar power modules and drones, China will quickly move upstream to attack the leading U.S. launch providers and secure a global commercial monopoly. Owning the launch market will give them an unsurmountable advantage against U.S. competitors in satellite internet, imaging, and power. The United States can still build a strategy to win. At this moment, it holds the competitive advantage in every critical space technology and has the finest set of commercial space firms in the world. It has pockets of innovative military thinkers within groups like the Defense Innovation Unit, under Mike Griffin, the Pentagon’s top research and development official. If the United States simply protects the intellectual property its creative minds unleash and defend its truly free markets from strategic mercantilist attack, it will not lose this new space race. The United States has done this before. It beat Germany to the nuclear bomb, it beat the Soviet Union to the nuclear triad, and it won the first space race. None of those victories was achieved by embracing the existing bureaucracy. Each of them depended on the president of the day following the only proven path to victory in a technological domain: establish a small team with a positively disruptive mindset and empower that team to investigate a wide range of new concepts, work with emerging technologies, and test innovative strategies. Today that means giving a dedicated Space Force the freedom to easily partner with commercial firms and leverage the private capital in building sustainable infrastructure that actually reduces the likelihood of conflict while securing a better economic future for the nation and the world.

**Hegemony solves extinction from every threat–alternatives are worse**

**Ikenberry 20** John Ikenberry 6-9-2020 “The Next Liberal Order: The Age of Contagion Demands More Internationalism, Not Less”<https://www.foreignaffairs.com/articles/united-states/2020-06-09/next-liberal-order> (Albert G. Milbank Professor of Politics and International Affairs at Princeton University and Global Eminence Scholar at Kyung Hee University, in South Korea)//Elmer

The rivalry between the United States and China will preoccupy the world for decades, and the problems of anarchy cannot be wished away. But for the United States and its partners, a far greater challenge lies in what might be called “the problems of modernity”: the deep, worldwide transformations unleashed by the forces of science, technology, and industrialism, or what the sociologist Ernest Gellner once described as a “tidal wave” pushing and pulling modern societies into an increasingly complex and interconnected world system. Washington and its partners are threatened less by rival great powers than by emergent, interconnected, and cascading transnational dangers. Climate change, pandemic diseases, financial crises, failed states, nuclear proliferation—all reverberate far beyond any individual country. So do the effects of automation and global production chains on capitalist societies, the dangers of the coming revolution in artificial intelligence, and other, as-yet-unimagined upheavals. The coronavirus is the poster child of these transnational dangers: it does not respect borders, and one cannot hide from it or defeat it in war. Countries facing a global outbreak are only as safe as the least safe among them. For better or worse, the United States and the rest of the world are in it together. Past American leaders understood that the global problems of modernity called for a global solution and set about building a worldwide network of alliances and multilateral institutions. But for many observers, the result of these efforts—the liberal international order—has been a failure. For some, it is tied to the neoliberal policies that produced financial crises and rising economic inequality; for others, it evokes disastrous military interventions and endless wars. The bet that China would integrate as a “responsible stakeholder” into a U.S.-led liberal order is widely seen to have failed, too. Little wonder that the liberal vision has lost its appeal. Liberal internationalists need to acknowledge these missteps and failures. Under the auspices of the liberal international order, the United States has intervened too much, regulated too little, and delivered less than it promised. But what do its detractors have to offer? Despite its faults, no other organizing principle currently under debate comes close to liberal internationalism in making the case for a decent and cooperative world order that encourages the enlightened pursuit of national interests. Ironically, the critics’ complaints make sense only within a system that embraces self-determination, individual rights, economic security, and the rule of law—the very cornerstones of liberal internationalism. The current order may not have realized these principles across the board, but flaws and failures are inherent in all political orders. What is unique about the postwar liberal order is its capacity for self-correction. Even a deeply flawed liberal system provides the institutions through which it can be brought closer to its founding ideals. However serious the liberal order’s shortcomings may be, they pale in comparison to its achievements. Over seven decades, it has lifted more boats—manifest in economic growth and rising incomes—than any other order in world history. It provided a framework for struggling industrial societies in Europe and elsewhere to transform themselves into modern social democracies. Japan and West Germany were integrated into a common security community and went on to fashion distinctive national identities as peaceful great powers. Western Europe subdued old hatreds and launched a grand project of union. European colonial rule in Africa and Asia largely came to an end. The G-7 system of cooperation among Japan, Europe, and North America fostered growth and managed a sequence of trade and financial crises. Beginning in the 1980s, countries across East Asia, Latin America, and eastern Europe opened up their political and economic systems and joined the broader order. The United States experienced its greatest successes as a world power, culminating in the peaceful end to the Cold War, and countries around the globe wanted more, not less, U.S. leadership. This is not an order that one should eagerly escort off the stage. Any alternative is worse and causes great power war. The major alternatives to a modernized world order supported by the United States appear unlikely, unappealing, or both. A Chinese-led order, for example, would be an illiberal one, characterized by authoritarian domestic political systems and statist economies that place a premium on maintaining domestic stability. There would be a return to spheres of influence, with China attempting to domi-nate its region, likely resulting in clashes with other regional powers, such as India, Japan, and Vietnam, which would probably build up their conventional or even nuclear forces. A new democratic, rules-based order fashioned and led by medium powers in Europe and Asia, as well as Canada, however attractive a concept, would simply lack the military capacity and domestic political will to get very far. A more likely alternative is a world with little order—a world of deeper disarray. Protectionism, nationalism, and populism would gain, and democracy would lose. Conflict within and across borders would become more common, and rivalry between great powers would increase. Cooperation on global challenges would be all but precluded. If this picture sounds familiar, that is because it increasingly corresponds to the world of today. The deterioration of a world order can set in motion trends that spell catastrophe. World War I broke out some 60 years after the Concert of Europe had for all intents and purposes broken down in Crimea. What we are seeing today resembles the mid-nineteenth century in important ways: the post– World War II, post–Cold War order cannot be restored, but the world is not yet on the edge of a systemic crisis. Now is the time to make sure one never materializes, be it from a breakdown in U.S.-Chinese relations, a clash with Russia, a conflagration in the Middle East, or the cumulative effects of climate change. The good news is that it is far from inevitable that the world will eventually arrive at a catastrophe; the bad news is that it is far from certain that it will not.

## 4

**Macron has a shallow lead now, but economic recession cedes to the ultra-right**

William **Horobin et. al**, Ania Nussbaum,Caroline Alexander, 1-12-**2022**, "For Macron and France, It’s the Economy, Stupide," Bloomberg,<https://www.bloomberg.com/news/features/2022-01-13/french-election-2022-macron-second-term-could-hinge-on-economic-recovery>]

For five years, Emmanuel Macron has been fending off challenges from the fringes of mainstream French politics. It began in the 2017 election runoff against far-right nationalist Marine Le Pen, continued through a showdown with the yellow vests protest movement, and is culminating in a culture-war clash with ultra-right-wing polemicist Éric Zemmour, who entered the race for the presidency in November. But as he seeks reelection in April, the president who was nurtured in the top echelons of the French technocracy has a potential knockout punch to throw: the robust economy. With polls showing that the French are veering right, Macron regularly gives nods to that part of the electorate. He has praised former President Nicolas Sarkozy for inciting a debate on “national identity,” hired a hard-line interior minister, and gave an interview to a far-right publication in which he spoke about immigration and Islam. In turn, his star has faded among left-wing voters. But rather than becoming ensnared in confrontations about identity and immigration, Macron’s most senior supporters are urging him to lean on his economic record. “At a time when crowing about France’s decline seems to be in fashion, we have among the best economic growth figures in the euro zone and we got back to pre-crisis levels of activity three months sooner than expected,” Finance Minister Bruno Le Maire told Parliament at the start of December, adding: “Let’s be proud of our economic policy, the jobs we have created, investment that is recovering, the attractiveness of France.” Indexed GDP France’s output reached pre-crisis levels ahead of its European peers After a precipitous crash early in the Covid-19 pandemic, France has recorded a standout rebound, with output reaching pre-crisis levels in the fall­—ahead of peers and far sooner than even Macron’s team expected. Vast spending to support households and firms during lockdowns preserved the country’s economic foundations, and Macron has built on them with the high-speed deployment of a €100 billion ($113 billion) recovery plan. Le Maire and others point to an employment market and corporate investment trends which suggest Macron’s earlier bet on labor and tax reforms may finally be delivering results. If they are right, that would mark a major shift in the course of European economic history. For years, France has been labeled as one of the bloc’s problem economies, unable to adapt to globalization and grow and create jobs like its bigger neighbor, Germany. French Unemployment Rate Holger Schmieding, the chief economist of Berenberg, in 2017 posited a “golden decade” ahead for France and says his thesis still holds. Even if Macron should stumble in the polls, whoever wins could potentially inherit an economic base some have compared to the legacy left to Angela Merkel by reformist German Chancellor Gerhard Schröder. “The rebound of France is one of the most interesting longer-term stories, and it is a key factor in stabilizing the core of Europe for good,” Schmieding says. “The return to a balance between Germany and France has huge political ramifications beyond the numbers.” Walk through the streets of Paris, and most buildings you see have been unaltered for more than a century. Similarly, the French themselves often remark on how resistant to change they are, even as they’ll be quick to bemoan the state’s regulatory overreach into the economy. Seven years ago, Macron was the economy minister and political neophyte tasked by President François Hollande to address just that inertia with so-called “structural reforms” that economists and international institutions had long implored France to undertake. He swept across the portfolios of his fellow ministers, loosening everything from the labor code to transportation regulations, and further opened the door to state asset sales. The controversial pro-business tilt of the law afforded Macron the necessary notoriety to quit Hollande’s Socialist government and craft his own election-winning political brand, sometimes dubbed “Macronomics” by the French media. Quickly after taking office in 2017, Macron used contentious decree-like tools to push further changes to labor laws through Parliament. And in his first budget, the then 39-year-old president picked apart France’s heavy taxes on wealth and capital. Such changes take time to bear fruit, and there is debate over Macron’s record and whether it’s a clear election asset for him. A recent report by the Institut des Politiques Publiques found that while his policies as president, including during Covid, have boosted disposable incomes overall—particularly for working French people—they didn’t for the poorest segment of the population. Another, from the government think tank Conseil d’Analyse Economique, found no link between the changes to taxation and improvements in wages and investment. And some of his planned overhauls remain on the to-do list, including the pension reform he paused during the pandemic. Yet even if it is tricky to confirm cause and effect, many indicators have improved in the last five years, giving Macron plenty of numbers to bolster his credibility. The tax cuts have helped raise company profit margins back to levels not seen since before the global financial crisis. That’s no vote-winner in a country where corporate profits are at best viewed with suspicion, but he can point to a corresponding increase in investment rates, which have reached their highest level since the 1970s. The pandemic did little in France to disrupt the trend of firms putting more money back into the economy—in fact, investment levels are higher now than before the crisis, while Europe as a whole still hasn’t recovered. French Investment Rate Entrepreneurial spirits are running high with the monthly count of new companies continuing on a sharp upward curve that began in 2017; a trend only briefly interrupted by the pandemic. And foreign investors are piling into France, pushing the country above the U.K. and Germany in consulting firm EY’s ranking for attracting projects that create new facilities and jobs—even though the number of investment projects dropped last year. Number of Projects With Foreign Investment The labor market is strong despite the upheaval of lockdowns. Unemployment has dropped to levels seen just prior to the first wave of Covid, and the employment rate hit 67.5%, its highest level since records began nearly a half-century ago. (This may be partly attributable to more women joining the workforce and French workers retiring later, rather than any of Macron’s policies.) The French leader can also boast some success in raising the ratio of new hires on coveted open-ended contracts—a crucial ticket in France to access housing and loans. Contracts Permanent contracts as a share of new contracts of more than one month And despite media portrayals of a nation of discontents, one long-running national survey indicates the French actually consider their living standards higher with Macron in the Élysée Palace than under either of his two most recent predecessors. French Living Standards Index There are holes in the economic record—most notably a still-gaping trade deficit that shows years of French industrial decline, as well as the debt mountain left behind by the pandemic. But come the election, the stars may align for the incumbent president if he can show that “Macronomics” is intact, with economic activity continuing to rebound from pandemic lows and consumers having billions of extra euros thanks to Covid relief plans. The timing could be decisive, because the recent surge of the omicron variant has driven French Covid cases to record numbers, put pressure on hospitals, and embroiled Macron in a controversy over his use of vulgar slang directed at the unvaccinated. He’ll also be counting on the longer-term economic argument to offset more recent concerns about surging inflation, as well as doubts about whether he’s delivered on his pledges to improve social mobility and unite a country polarized by right-left divisions on issues ranging from religion to security. If Macron prevails, he would be the first incumbent to win reelection in France since Jacques Chirac 20 years ago. With Olaf Scholz now chancellor in Germany and Mario Draghi leading Italy, that raises the prospect of Europe’s three largest economies being run by closely aligned champions of closer EU integration who are eager to project the bloc’s economic heft. Should he be defeated by Le Pen, the political landscape in France and Europe would look significantly different. While she has dropped her opposition to the euro, her National Rally party remains staunchly opposed to Macron’s agenda and wants to put the brakes on free circulation and trade within the bloc. Valérie Pécresse, a center-right candidate, would provide more continuity on the economic front. Macron has already dangled the prospect of many more years of his economic approach. The furlough scheme created in crisis has been transformed into a long-term program that provides a financial backstop for firms and their employees to have more flexible working hours. Looking further ahead still, he has presented a “France 2030” plan to pour public money into high-risk industrial investments. And pro-business fiscal policies are back on the agenda, alongside a pledge to revive the pension reform. “Our responsibility is to continue to offer you an economic, tax, and financial environment that is as favorable to you as possible,” Le Maire told business leaders at a gathering in Paris on Jan. 5. “Believe me, there’s a lot of work to do, and thank goodness—otherwise we’d get bored in the coming years.”

**Commercial space industry spills over to the economy writ large --- it’s a massive part of France’s economy**

**OECD 20** [Organisation for Economic Co-operation and Development is an intergovernmental economic organisation with 38 member countries, founded in 1961 to stimulate economic progress and world trade. “MEASURING THE ECONOMIC IMPACT OF THE SPACE SECTOR KEY INDICATORS AND OPTIONS TO IMPROVE DATA.” Oct. 7, 2020. https://www.oecd.org/sti/inno/space-forum/measuring-economic-impact-space-sector.pdf]

1. Conservative estimates. Budgets include data for civil and defence programmes, when available. For European countries, national estimates include contributions to the European Union, European Space Agency, Eumetsat and other international programmes, where applicable. The figure does not include the aggregate budget for the European Union. Source: Government budget sources and OECD databases. The majority of G20 economies’ space budgets constituted less than 0.05% of GDP in 2019 (including civil and military space activities where data are available). Within these budgets, government investments in space R&D are generally much smaller than other government-funded research in domains such as health, agriculture or energy. What is the space economy? The space economy can be defined as “the full range of activities and the use of resources that create and provide value and benefits to human beings in the course of exploring, understanding, managing and utilising space”(OECD, forthcoming). It goes well beyond the space manufacturing sector, also comprising the increasingly pervasive impacts of space-derived products, services and knowledge on economies and societies. For measurement purposes, the space economy can be divided into three components, as elaborated in Figure 2: • The upstream sector (e.g. R&D, manufacturing and launch) • The downstream sector (space infrastructure operations and “down-to-earth” products and services that directly rely satellite data and signals to operate and function) • Activities that are derived from space-derived activities but not dependent on it to function (e.g. technology transfers from the space sector to the automotive or medical sectors) Relevant actors and activities are identified by a combination of industry surveys and statistical analysis. Figure 2. Defining the perimeters of the space economy Source: OECD (forthcoming), Handbook on Measuring the Space Economy, second edition. Estimated annual global commercial revenues from the space sector are in the range of USD 280-300 billion (OECD, 2019). The bulk of the revenues come from commercial satellite services (USD 126-130 billion) based on satellite capacity (e.g. telecommunications signals), while space systems’ manufacturing are valued at less than USD 20 billion, and often sustained by government procurement. The second largest share of revenues (USD 125-130 billion) consists of consumer equipment, which is a market dominated by consumer electronics companies (e.g. devices and chipsets to receive positioning signals, satellite television dishes). But space activities have impacts far beyond commercial revenues, with spillovers in many segments of the economy, for instance in agriculture, transport and the environment. Technology transfers from initial space exploration and human spaceflight missions also find their way into many diverse commercial products (e.g. medical imagery, water and air purifying systems). A report commissioned by the US Department of Commerce estimates that in the United States alone, the Global Positioning System (GPS) may have generated socio-economic benefits worth some USD 1.4 trillion since its introduction in the 1980s (O’Connor et al, 2019). What are the impacts of space activities and how do we measure them? As the applications of space technologies multiply, so do the derived impacts (Figure 3).The most commonly identified benefits of space activities include positive impacts on GDP through employment and revenue gains, diverse economic benefits – especially cost avoidances associated with space-based meteorological weather observations – , technological and scientific excellence, improved food safety, and innovation (OECD, 2019). Space-based infrastructure plays an increasing role in supporting critical societal functions such as telecommunications, finance and utilities. As an illustration, space manufacturers and agencies contributed actively to the response efforts during the COVID-19 crisis, by producing medical equipment, providing storage and processing capabilities for modelling and other research needs, and studying impacts. Space actors also provided high-speed connectivity to remote locations (e.g. establishing links to remote hospitals, residential and small business customers, and deployment of online solutions schooling) as well as earth observation imagery for industry intelligence and monitoring of remotely located infrastructure (OECD, 2020).

**Far-right victory ensures a laundry list of impacts – Euro demise, independence referendum, and racist immigration policy.**

**Goodwin, PhD, 17** (Goodwin, Matthew J. (Prof. PoliSci@University of Kent, Visiting Fellow@Chatham House, Postdoctoral Fellowship@Economic and Social Research Council, PhD PoliSci and Gov@University of Bath). “What a Le Pen Win Would Look Like,” New York Times, March 23, 2017. https://www.nytimes.com/2017/03/23/opinion/what-a-marine-le-pen-win-would-look-like.html//SHL)

In the short term, a National Front win would throw the European Union into a deep crisis. Political scientists have argued that over the past two decades, people’s attitudes toward the union have passed through two stages: from broad acceptance in the 1960s and ’70s to an instinctive skepticism from the ’80s onward. A victory for Ms. Le Pen, coming after Brexit, would underscore that Europeans have now arrived at a third phase: active rebellion. But what of French domestic politics first? Ms. Le Pen’s program rests on the assumption that her presidential victory is followed by her party’s achieving a parliamentary majority after elections to the National Assembly in June. Given that the National Front has just two seats in Parliament, Ms. Le Pen would need to draw on support from the center-right Republicans. She is therefore gambling on the hope that this will be the year when the so-called Republican Front — an unwritten law in French politics whereby the main parties refuse to work with the National Front — breaks down. This, too, is unlikely. But let us entertain the scenario that Ms. Le Pen does get this far. Since its formation in 1972, the National Front has won attention mainly for hard-right policies like restricting immigration and combating the “Islamification” of French society. If she were to stay true to those commitments, President Le Pen would move to leave the Schengen border-free zone, slash net migration to 10,000 per year, strip dual nationals of their French citizenship and put 15,000 more police officers on the streets. But of much greater significance is her position on the euro and the European Union, for a Le Pen presidency could spell the demise of the currency and a further unraveling of the union. Crises on multiple fronts — the re-emerging financial crisis in Greece, a creaking Italian banking sector, the prospect of more refugees arriving now that winter has passed and Brexit — are already placing dangerous stress on the union. Although growth is slowly returning to the eurozone, a French withdrawal on the orders of Ms. Le Pen could still deliver the currency union a fatal blow. Ms. Le Pen is no mild Euroskeptic. She views the euro as a “political weapon” that the European Central Bank, the European Union and global financiers have used to enslave France. Ms. Le Pen firmly believes that the euro is destined to fail and that while leaving would be costly, it would still be cheaper than hanging around for the complete collapse of the eurozone. “The French people are sitting on the Titanic, known as the euro, and they are listening to the violins,” her strategist in London said. “We are going to push them off and into the lifeboats.” Ms. Le Pen plans to do this by renegotiating the terms of France’s membership in the union, talks that conceivably would coincide with the already fraught Brexit negotiations. She will demand a return of full national sovereignty, including monetary independence, fiscal and financial autonomy. Her lieutenants talk openly about wanting to leave the euro, redenominating French euro assets and debt in a new currency on a “one franc to one euro” basis, and undertaking competitive devaluations. A newly independent Bank of France, they argue, could buy French government bonds in the secondary market and suppress yields. To strengthen her hand in talks, her officials say, Ms. Le Pen would, in her first year in office as president, use Article 11 of the French Constitution to conduct a referendum on whether France should leave the European Union altogether: Frexit. Most French voters remain in favor of union membership and the euro. But given her program, the very election of Ms. Le Pen would change the game: Investors would sell off French assets, markets would fall, and the eurozone recovery itself could falter. Ordinary French savers, worried about the risk of devaluation from a return to the franc, would rush to withdraw their euros for fear of capital controls being imposed, as they were on Greece. A major run on the euro, and capital flight spreading across the continent, would destabilize the currency union as markets began to anticipate its dissolution.

**Collapse of the Euro causes recession greater than World War II due to fragility from COVID.**

**Goranitis 4/1** Dimitrios Goranitis [Financial Services Industry Risk and Regulatory Advisory Partner in Deloitte Romania], 4-1-2020, "Why the most significant macroeconomic risk is not the upcoming recession, but the collapse of the Euro and the European Union,"<https://www2.deloitte.com/ro/en/pages/business-continuity/articles/why-the-most-significant-macroeconomic-risk-is-not-the-upcoming-recession-but-the-collapse-of-the-euro-and-the-european-union.html> SM

Why the most significant macroeconomic risk is not the upcoming recession, but the collapse of the Euro and the European Union 27 April 2020 This article expresses the author's own opinions and it does not reflect the position of Deloitte Romania Ten years after the credit crisis, the European Union demonstrates that it has learned very little on how to unite and decisively take pan-EU measures to tackle crisis and support recovery. A series of long negotiations between the major economies of the South versus the North, with the European Central Bank (ECB) awkwardly stuck in the middle, not only doesn’t address the sustainability of the European economy as a total, but it feeds, as in the last crisis, the speculative appetite of the markets towards sovereign debt of the weaker links. However, this time, EU is not called to bail out a small economy like Greece, but Italy and Spain, its 3rd and 4th largest economies, accounting for approximately EUR 3.5 trillion of its Gross Domestic Product. As the COVID-19 lockdown seems to be running the middle of the first wave course, experts struggle to identify the economic impact and its duration, with IMF predicting that the toll for the economy will only be comparable to that of World War II. Despite a recent financial crisis in the EU that triggered a political and existential crisis with Grexit being the dominant scenario and Brexit the unexpected outcome, member states have resorted again to national crisis management and national recovery strategy, while EU institutions are trying hopelessly to demonstrate their existence. Northern member states reject the idea of Eurobonds, a mutualization of debt, and have turned down ECB’s proposal for an EU bad bank able to deal collectively with a second wave of Non-Performing Loans (NPL) across Europe. During the credit crisis in the last decade, the same message from EU sparked the markets to speculate on sovereign debt of the weaker countries and created an extended financial crisis in the south of Europe that ended up becoming a threat to the Euro itself as a global currency and to the foundation of the European Union. The result was a Greek bailout that left the Greek economy with a GDP reduced by 30%, a result comparable only to failed state economies like Libya and Syria, and a sovereign debt close to 200% of GDP admittedly not viable or manageable. But what is different now? First of all, Italy and Spain have seen how the Greek bailout program failed under the guidance of European Stability Mechanism (ESM) and IMF merely based on austerity policies. Italy has repeatedly stated that it will not resort to ESM bailouts in fear of conditions imposed by Troika similar to Greece. This time around, Italy and Spain are too big to fail and too big to “discipline” into a forced bail out. Second, this is not just a financial crisis, this is the result of a health and humanitarian crisis. Lack of “togetherness” from EU member states has sparked a tremendous anti-EU sentiment in the countries worst impacted. Italy’s anti-EU sentiment rose from 26% in November to 49% in March. Third, this new crisis comes very close to Brexit and ongoing political instability due to rising populism in Italy, France and Eastern Europe, and it doesn’t seem to bring member states together, but rather divide them. This time around, EU is already too fragile to withstand more nationalism. Last, the ECB has already used most of its firing power, with interest rates being at record low and quantitative easing at record high. Its war chest is not that impressive, hence the markets seem unaffected by its intervention. Statements such as “ECB will do whatever it takes” do not yield the same result as they did ten years ago. This time around, a controlled breakup of the EU or its reduction to a trade agreement and the abandonment of the single currency become a real scenario, and not a speculative tool for the markets. Impossible to quantify the probability of that scenario, but after Brexit and US-China trade war, who is to say what is probable or not?

**Decline cascades---nuclear war**

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Various scholars and institutions regard global social instability as the greatest threat facing this decade. The catalyst has been postulated to be a Second Great Depression which, in turn, will have profound implications for global security and national integrity. This paper, written from a broad systems perspective, illustrates how emerging risks are getting more complex and intertwined; blurring boundaries between the economic, environmental, geopolitical, societal and technological taxonomy used by the World Economic Forum for its annual global risk forecasts. Tight couplings in our global systems have also enabled risks accrued in one area to snowball into a full-blown crisis elsewhere. The COVID-19 pandemic and its socioeconomic fallouts exemplify this systemic chain-reaction. Onceinexorable forces of globalization are rupturing as the current global system can no longer be sustained due to poor governance and runaway wealth fractionation. The coronavirus pandemic is also enabling Big Tech to expropriate the levers of governments and mass communications worldwide. This paper concludes by highlighting how this development poses a dilemma for security professionals. Key Words: Global Systems, Emergence, VUCA, COVID-9, Social Instability, Big Tech, Great Reset INTRODUCTION The new decade is witnessing rising volatility across global systems. Pick any random “system” today and chart out its trajectory: Are our education systems becoming more robust and affordable? What about food security? Are our healthcare systems improving? Are our pension systems sound? Wherever one looks, there are dark clouds gathering on a global horizon marked by volatility, uncertainty, complexity and ambiguity (VUCA). But what exactly is a global system? Our planet itself is an autonomous and selfsustaining mega-system, marked by periodic cycles and elemental vagaries. Human activities within however are not system isolates as our banking, utility, farming, healthcare and retail sectors etc. are increasingly entwined. Risks accrued in one system may cascade into an unforeseen crisis within and/or without (Choo, Smith & McCusker, 2007). Scholars call this phenomenon “emergence”; one where the behaviour of intersecting systems is determined by complex and largely invisible interactions at the substratum (Goldstein, 1999; Holland, 1998). The ongoing COVID-19 pandemic is a case in point. While experts remain divided over the source and morphology of the virus, the contagion has ramified into a global health crisis and supply chain nightmare. It is also tilting the geopolitical balance. China is the largest exporter of intermediate products, and had generated nearly 20% of global imports in 2015 alone (Cousin, 2020). The pharmaceutical sector is particularly vulnerable. Nearly “85% of medicines in the U.S. strategic national stockpile” sources components from China (Owens, 2020). An initial run on respiratory masks has now been eclipsed by rowdy queues at supermarkets and the bankruptcy of small businesses. The entire global population – save for major pockets such as Sweden, Belarus, Taiwan and Japan – have been subjected to cyclical lockdowns and quarantines. Never before in history have humans faced such a systemic, borderless calamity. COVID-19 represents a classic emergent crisis that necessitates real-time response and adaptivity in a real-time world, particularly since the global Just-in-Time (JIT) production and delivery system serves as both an enabler and vector for transboundary risks. From a systems thinking perspective, emerging risk management should therefore address a whole spectrum of activity across the economic, environmental, geopolitical, societal and technological (EEGST) taxonomy. Every emerging threat can be slotted into this taxonomy – a reason why it is used by the World Economic Forum (WEF) for its annual global risk exercises (Maavak, 2019a). As traditional forces of globalization unravel, security professionals should take cognizance of emerging threats through a systems thinking approach. METHODOLOGY An EEGST sectional breakdown was adopted to illustrate a sampling of extreme risks facing the world for the 2020-2030 decade. The transcendental quality of emerging risks, as outlined on Figure 1, below, was primarily informed by the following pillars of systems thinking (Rickards, 2020): • Diminishing diversity (or increasing homogeneity) of actors in the global system (Boli & Thomas, 1997; Meyer, 2000; Young et al, 2006); • Interconnections in the global system (Homer-Dixon et al, 2015; Lee & Preston, 2012); • Interactions of actors, events and components in the global system (Buldyrev et al, 2010; Bashan et al, 2013; Homer-Dixon et al, 2015); and • Adaptive qualities in particular systems (Bodin & Norberg, 2005; Scheffer et al, 2012) Since scholastic material on this topic remains somewhat inchoate, this paper buttresses many of its contentions through secondary (i.e. news/institutional) sources. ECONOMY According to Professor Stanislaw Drozdz (2018) of the Polish Academy of Sciences, “a global financial crash of a previously unprecedented scale is highly probable” by the mid- 2020s. This will lead to a trickle-down meltdown, impacting all areas of human activity. The economist John Mauldin (2018) similarly warns that the “2020s might be the worst decade in US history” and may lead to a Second Great Depression. Other forecasts are equally alarming. According to the International Institute of Finance, global debt may have surpassed $255 trillion by 2020 (IIF, 2019). Yet another study revealed that global debts and liabilities amounted to a staggering $2.5 quadrillion (Ausman, 2018). The reader should note that these figures were tabulated before the COVID-19 outbreak. The IMF singles out widening income inequality as the trigger for the next Great Depression (Georgieva, 2020). The wealthiest 1% now own more than twice as much wealth as 6.9 billion people (Coffey et al, 2020) and this chasm is widening with each passing month. COVID-19 had, in fact, boosted global billionaire wealth to an unprecedented $10.2 trillion by July 2020 (UBS-PWC, 2020). Global GDP, worth $88 trillion in 2019, may have contracted by 5.2% in 2020 (World Bank, 2020). As the Greek historian Plutarch warned in the 1st century AD: “An imbalance between rich and poor is the oldest and most fatal ailment of all republics” (Mauldin, 2014). The stability of a society, as Aristotle argued even earlier, depends on a robust middle element or middle class. At the rate the global middle class is facing catastrophic debt and unemployment levels, widespread social disaffection may morph into outright anarchy (Maavak, 2012; DCDC, 2007). Economic stressors, in transcendent VUCA fashion, may also induce radical geopolitical realignments. Bullions now carry more weight than NATO’s security guarantees in Eastern Europe. After Poland repatriated 100 tons of gold from the Bank of England in 2019, Slovakia, Serbia and Hungary quickly followed suit. According to former Slovak Premier Robert Fico, this erosion in regional trust was based on historical precedents – in particular the 1938 Munich Agreement which ceded Czechoslovakia’s Sudetenland to Nazi Germany. As Fico reiterated (Dudik & Tomek, 2019): “You can hardly trust even the closest allies after the Munich Agreement… I guarantee that if something happens, we won’t see a single gram of this (offshore-held) gold. Let’s do it (repatriation) as quickly as possible.” (Parenthesis added by author). President Aleksandar Vucic of Serbia (a non-NATO nation) justified his central bank’s gold-repatriation program by hinting at economic headwinds ahead: “We see in which direction the crisis in the world is moving” (Dudik & Tomek, 2019). Indeed, with two global Titanics – the United States and China – set on a collision course with a quadrillions-denominated iceberg in the middle, and a viral outbreak on its tip, the seismic ripples will be felt far, wide and for a considerable period. A reality check is nonetheless needed here: Can additional bullions realistically circumvallate the economies of 80 million plus peoples in these Eastern European nations, worth a collective $1.8 trillion by purchasing power parity? Gold however is a potent psychological symbol as it represents national sovereignty and economic reassurance in a potentially hyperinflationary world. The portents are clear: The current global economic system will be weakened by rising nationalism and autarkic demands. Much uncertainty remains ahead. Mauldin (2018) proposes the introduction of Old Testament-style debt jubilees to facilitate gradual national recoveries. The World Economic Forum, on the other hand, has long proposed a “Great Reset” by 2030; a socialist utopia where “you’ll own nothing and you’ll be happy” (WEF, 2016). In the final analysis, COVID-19 is not the root cause of the current global economic turmoil; it is merely an accelerant to a burning house of cards that was left smouldering since the 2008 Great Recession (Maavak, 2020a). We also see how the four main pillars of systems thinking (diversity, interconnectivity, interactivity and “adaptivity”) form the mise en scene in a VUCA decade. ENVIRONMENTAL What happens to the environment when our economies implode? Think of a debt-laden workforce at sensitive nuclear and chemical plants, along with a concomitant surge in industrial accidents? Economic stressors, workforce demoralization and rampant profiteering – rather than manmade climate change – arguably pose the biggest threats to the environment. In a WEF report, Buehler et al (2017) made the following pre-COVID-19 observation: The ILO estimates that the annual cost to the global economy from accidents and work-related diseases alone is a staggering $3 trillion. Moreover, a recent report suggests the world’s 3.2 billion workers are increasingly unwell, with the vast majority facing significant economic insecurity: 77% work in part-time, temporary, “vulnerable” or unpaid jobs. Shouldn’t this phenomenon be better categorized as a societal or economic risk rather than an environmental one? In line with the systems thinking approach, however, global risks can no longer be boxed into a taxonomical silo. Frazzled workforces may precipitate another Bhopal (1984), Chernobyl (1986), Deepwater Horizon (2010) or Flint water crisis (2014). These disasters were notably not the result of manmade climate change. Neither was the Fukushima nuclear disaster (2011) nor the Indian Ocean tsunami (2004). Indeed, the combustion of a long-overlooked cargo of 2,750 tonnes of ammonium nitrate had nearly levelled the city of Beirut, Lebanon, on Aug 4 2020. The explosion left 204 dead; 7,500 injured; US$15 billion in property damages; and an estimated 300,000 people homeless (Urbina, 2020). The environmental costs have yet to be adequately tabulated. Environmental disasters are more attributable to Black Swan events, systems breakdowns and corporate greed rather than to mundane human activity. Our JIT world aggravates the cascading potential of risks (Korowicz, 2012). Production and delivery delays, caused by the COVID-19 outbreak, will eventually require industrial overcompensation. This will further stress senior executives, workers, machines and a variety of computerized systems. The trickle-down effects will likely include substandard products, contaminated food and a general lowering in health and safety standards (Maavak, 2019a). Unpaid or demoralized sanitation workers may also resort to indiscriminate waste dumping. Many cities across the United States (and elsewhere in the world) are no longer recycling wastes due to prohibitive costs in the global corona-economy (Liacko, 2021). Even in good times, strict protocols on waste disposals were routinely ignored. While Sweden championed the global climate change narrative, its clothing flagship H&M was busy covering up toxic effluences disgorged by vendors along the Citarum River in Java, Indonesia. As a result, countless children among 14 million Indonesians straddling the “world’s most polluted river” began to suffer from dermatitis, intestinal problems, developmental disorders, renal failure, chronic bronchitis and cancer (DW, 2020). It is also in cauldrons like the Citarum River where pathogens may mutate with emergent ramifications. On an equally alarming note, depressed economic conditions have traditionally provided a waste disposal boon for organized crime elements. Throughout 1980s, the Calabriabased ‘Ndrangheta mafia – in collusion with governments in Europe and North America – began to dump radioactive wastes along the coast of Somalia. Reeling from pollution and revenue loss, Somali fisherman eventually resorted to mass piracy (Knaup, 2008). The coast of Somalia is now a maritime hotspot, and exemplifies an entwined form of economic-environmental-geopolitical-societal emergence. In a VUCA world, indiscriminate waste dumping can unexpectedly morph into a Black Hawk Down incident. The laws of unintended consequences are governed by actors, interconnections, interactions and adaptations in a system under study – as outlined in the methodology section. Environmentally-devastating industrial sabotages – whether by disgruntled workers, industrial competitors, ideological maniacs or terrorist groups – cannot be discounted in a VUCA world. Immiserated societies, in stark defiance of climate change diktats, may resort to dirty coal plants and wood stoves for survival. Interlinked ecosystems, particularly water resources, may be hijacked by nationalist sentiments. The environmental fallouts of critical infrastructure (CI) breakdowns loom like a Sword of Damocles over this decade. GEOPOLITICAL The primary catalyst behind WWII was the Great Depression. Since history often repeats itself, expect familiar bogeymen to reappear in societies roiling with impoverishment and ideological clefts. Anti-Semitism – a societal risk on its own – may reach alarming proportions in the West (Reuters, 2019), possibly forcing Israel to undertake reprisal operations inside allied nations. If that happens, how will affected nations react? Will security resources be reallocated to protect certain minorities (or the Top 1%) while larger segments of society are exposed to restive forces? Balloon effects like these present a classic VUCA problematic. Contemporary geopolitical risks include a possible Iran-Israel war; US-China military confrontation over Taiwan or the South China Sea; North Korean proliferation of nuclear and missile technologies; an India-Pakistan nuclear war; an Iranian closure of the Straits of Hormuz; fundamentalist-driven implosion in the Islamic world; or a nuclear confrontation between NATO and Russia. Fears that the Jan 3 2020 assassination of Iranian Maj. Gen. Qasem Soleimani might lead to WWIII were grossly overblown. From a systems perspective, the killing of Soleimani did not fundamentally change the actor-interconnection-interaction adaptivity equation in the Middle East. Soleimani was simply a cog who got replaced.

## 5

**Counterplan: The appropriation of outer space by private entities except for Viasat is unjust**

**Viasat boosts Indigenous economies.**

**SBS 1/12** [Indigenous Australians to lead space industry at new Alice Springs earth ground station, <https://www.sbs.com.au/news/indigenous-australians-to-lead-space-industry-at-new-alice-springs-earth-ground-station/b35811cc-1ecb-4a90-9be2-d6c1f4486e3b>, Jan 12 2022, SBS News] [SS]

A multi-million-dollar earth ground station will be built in the Northern Territory's Alice Springs, set to be the first development of its kind on Aboriginal-owned land in Australia. Indigenous Australians will become leading participants in the global satellite and space industry, with the Real-Time Earth (RTE) facility expected to bring new jobs and economic opportunities to remote Australia. Global communications company Viasat Inc. has partnered with Aboriginal not-for-profit science and technology company Centre for Appropriate Technology Ltd (CfAT) to deliver the project, financed by Indigenous Business Australia. It will be used to track the next generation of low earth orbiting satellites for earth observation used for scientific research, environmental monitoring, and commercial applications. CfAT chairperson Peter Renehan said the facility "puts Aboriginal people at the forefront of Australia’s growing space sector". "This state-of-the-art development will provide a positive contribution to the local economy through employment opportunities for local businesses during each phase of construction as well as ongoing jobs for local Aboriginal people once operational," she said. "CfAT exists to provide people in regional and remote Australia with options for maintaining their relationship with country. "We do this by providing technologically innovative solutions to infrastructure challenges with digital connectivity as a core focus of the companies work." A KPMG report Aboriginal and Torres Strait Islander people own or have controlling interests in about 40 per cent of the Australian land mass under various forms of title and legislation. Indigenous Business Australia Chairperson Eddie Fry said the new earth ground station was important for both the Australian space industry and the Indigenous community. "Aboriginal and Torres Strait Islander people own or control significant areas of land in remote areas where there is limited economic potential," he said. "This first of its kind development on Aboriginal land gives the community both economic and social returns." He added Alice Springs was an optimal environment for this type of technology due to a large number of cloud-free days, limited radio interference and access to fibre network on the grounds. Indigenous Australians Minister Ken Wyatt said developments such as this showcased how Aboriginal and Torres Strait Islander people could continue leading roles in our nation’s innovation. "Indigenous Australians hold a powerful economic force through their connections with land, culture and community,” he said. "This exciting project is a prime example of the power of country to help deliver commercial returns through technology, employment and career opportunities."

**Indigenous led economics solve warming.**

**Swiderska ‘21** [Here's why Indigenous economics is the key to saving nature, <https://www.iied.org/heres-why-indigenous-economics-key-saving-nature>, Krystyna Swiderska, April 13 2021] [SS]

Western economics is not only destroying the environment. It is also destroying Indigenous peoples’ holistic development models that ensure balance with nature, and provide alternative paradigms for sustainable development. For many of the world’s 476 million Indigenous peoples, balance and reciprocity (PDF) with nature are fundamental principles that guide all aspects of life. Rather than privileging human economic goals and pursuing nature conservation separately, many Indigenous societies seek to achieve ‘holistic wellbeing’ or ‘Buen Vivir’, which means the wellbeing of both people and nature together. Take the Quechua and Aymara people in Peru, for example, who make up nearly a fifth of Peru’s population. According to their Andean cosmovision, the world is divided into three communities or ‘ayllus’: i) the wild or natural world, ii) the human and domesticated world, and iii) the sacred world. To achieve wellbeing (‘Sumaq Causay’), these three communities must be in balance, which requires reciprocity between them (‘ayni’). These Andean concepts come from the Incas, the largest pre-Columbian empire, and are still very much alive in the Andes. So too are barter markets (PDF), which provide people at different altitudes with access to essential nutrients and help sustain rich Andean biodiversity. Balance with nature, reciprocity and solidarity (the obligation to help those in need) are key principles embedded in many Indigenous cultures across the world, from the Americas, to China, India and Kenya. These Indigenous economies (PDF) promote sufficiency rather than infinite growth, and equity and redistribution of wealth rather than accumulation. Many subsistence economies are also characterised by circular agriculture models, which minimise waste and carbon emissions. The separation of people and nature threatens both In Peru and across the world, the nature- and people-friendly informal economies of Indigenous peoples are steadily being eroded by Western, neo-liberal economic policies that separate people and nature, and view Indigenous cultures and subsistence economies as ‘backward’ and in need of modernisation. Ironically, the same Indigenous economies that have conserved and enhanced biodiversity for millennia are now threatened by environmental policies that often fail to recognise the value of Indigenous knowledge, thus contributing to its erosion. Most of the world’s remaining biodiversity is located on lands owned or managed by Indigenous peoples. A global scientific assessment (PDF) by the Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES) found that “nature is generally declining less rapidly in Indigenous peoples’ lands than in other lands”. However, the IPBES assessment also found nature managed by Indigenous peoples and local communities (IPLCs) is under increasing pressure, as is the knowledge of how to manage it. Areas managed by IPLCs “are facing growing resource extraction, commodity production, mining and transport and energy infrastructure”. Negative impacts from all these pressures include “continued loss of subsistence and traditional livelihoods” and impacts on “health and wellbeing from pollution and water insecurity”. These impacts “also challenge the transmission of Indigenous and local knowledge” and “the ability of indigenous peoples and local communities to conserve and sustainably manage wild and domesticated biodiversity that are also relevant to broader society”. Mainstream economic activities on Indigenous lands have rarely benefited Indigenous Peoples, who make up 6% of the world’s population but 19% of the extreme poor. In fact, their situation has often deteriorated (PDF), due to loss of land and natural resources, and the weakening of cultural ties and social cohesion. Integration with market economies has led to social tension and conflict, limited opportunities for meaningful employment, low returns for producers and a shift towards consumerist lifestyles. The dominant approach to nature conservation through protected areas also reflects a Western worldview that separates people and nature, often excluding Indigenous people to protect biodiversity. Many state-run protected areas have resulted in negative social impacts, are losing biodiversity and are not effectively or equitably managed, as IPBES found (PDF). Bridging the divide Clearly, alternative development and conservation models that bridge the nature-people divide are urgently needed to achieve the 2030 Sustainable Development Goals. Indigenous Peoples’ holistic worldviews provide alternative development paradigms, which benefit both people and nature. For example, Indigenous Peoples’ ‘mixed economies’, which combine subsistence and market activities, sustain Indigenous values that underpin biodiversity conservation, while contributing to nutrition, health, wellbeing and climate resilience, and generating income. Local markets and short value chains are often prioritised, rather than global export markets. Indigenous Peoples have started to shape new community enterprise models that assert control over their territories and promote Indigenous traditions of sustainability and enterprise for the common good. These Indigenous enterprises have delivered multiple benefits for livelihoods, culture, social capital and biodiversity conservation. For example, in the Potato Park in Peru, a Biocultural Heritage Territory governed by six Quechua communities, collective micro-enterprises (for gastronomy, agro-ecotourism, crafts, herbal teas and so on) are guided by Andean principles and holistic wellbeing goals. Ten per cent of the revenues from each micro-enterprise is invested in a communal fund and redistributed annually to reward biocultural heritage stewards and help those in need. Thanks to their ancestral Indigenous knowledge, linked with science, the Potato Park communities have ensured food security despite severe climate change impacts and the COVID-19 pandemic. During the pandemic, the communities donated a ton of potatoes to hungry people in Cusco, in line with the principle of solidarity. The social ties and mutual care and solidarity that Indigenous communities have displayed in the pandemic, highlights the type of social relations that are core to resilient economies and an inclusive green recovery. The concept of 'biocultural heritage', which is derived from Indigenous Peoples’ holistic worldviews and traditions, recognises the inextricable linkages between nature, culture and development. The way forward A new narrative is needed which recognises the highly progressive and dynamic nature of Indigenous knowledge and economic systems that put nature and equity at the heart of development. Indigenous Peoples have a leading role to play in shaping alternative paradigms to mainstream economic models that are destroying the environment and traditional cultures. Achieving the Sustainable Development Goals (SDGs), and undoing years of racial injustice that lie at the root of poverty and inequality, requires structural reform across economic and environment sectors, from local to global levels, to put Indigenous Peoples at the heart of decision-making. This year provides an opportunity for governments and political leaders to demonstrate real commitment to achieving the SDGs and leaving no one behind. It is not too late to reform the leadership structure for the UN Food Systems Summit in September 2021, so that representatives of poor, hungry, marginalised and Indigenous Peoples play a leading role. Or to reform the proposed post-2020 Global Biodiversity Framework (PDF), to be agreed at the biodiversity convention COP15 in October, so that the knowledge and leadership of Indigenous Peoples and local communities is integrated across the targets. Indigenous Peoples have answers for many of the world’s most intractable challenges: inequality, ecocide, climate change. We cannot address these challenges without their wisdom and leadership.

## 6

**CP: The appropriation of outer space by private entities, with the exception of mining Mercury and the construction of a Dyson Sphere, ought to be banned.**

**Private entities ought to engage in the mining of Mercury and use materials extracted to construct a Dyson Sphere around the Sun.**

**Dyson sphere is feasible now – mercury mining enables infinite pleasurable experiences and solves existential resource shortages**

**Dvorsky 12** [George Dvorsky, 4-17-2012, "How to build a Dyson sphere in five (relatively) easy steps," Gizmodo, https://gizmodo.com/how-to-build-a-dyson-sphere-in-five-relatively-easy-s-5902205, accessed 1-27-2022] BCortez

We are closer to being able to build a Dyson Sphere than we think. By enveloping the sun in a massive sphere of artificial habitats and solar panels, a Dyson Sphere would provide us with more energy than we would ever know what to do with while dramatically increasing our living space. Implausible you say? Something for our distant descendants to consider? Think again. We could conceivably get going on the project in about 25 to 50 years, with completion of the first phase requiring only a few decades.∂ Given that our resources here on Earth are starting to dwindle, and combined with the problem of increasing demand for more energy and living space, this would seem to a good long-term plan for our species.∂ Now, before I tell you how we could do such a thing, it's worth doing a quick review of what is meant by a "Dyson sphere".∂ Dyson Spheres, Swarms, and Bubbles∂ The Dyson sphere, also referred to as a Dyson shell, is the brainchild of the physicist and astronomer [Freeman Dyson](http://en.wikipedia.org/wiki/Freeman_Dyson). In 1959 he put out a two page paper titled, "Search for Artificial Stellar Sources of Infrared Radiation" in which he described a way for an advanced civilization to utilize all of the energy radiated by their sun. This hypothetical megastructure, as envisaged by Dyson, would be the size of a planetary orbit and consist of a shell of solar collectors (or habitats) around the star. With this model, all (or at least a significant amount) of the energy would hit a receiving surface where it can be used. He speculated that such structures would be the logical consequence of the long-term survival and escalating energy needs of a technological civilization.∂ Needless to say, the amount of energy that could be extracted in this way is mind-boggling. [According](http://www.aleph.se/Nada/dysonFAQ.html) to [Anders Sandberg](http://www.aleph.se/andart/), an expert on exploratory engineering, a Dyson sphere in our solar system with a radius of one AU would have a surface area of at least 2.72x10^17 km2, which is around 600 million times the surface area of the Earth. The sun has an energy output of around 4x10^26 W, of which most would be available to do useful work.∂ I should note at this point that a Dyson sphere may not be what you think it is. Science fiction often portrays it as a solid shell enclosing the sun, usually with an inhabitable surface on the inside. Such a structure would be a physical impossibility as the tensile strength would be far too immense and it would be susceptible to severe drift.∂ Dyson's original proposal simply assumed there would be enough solar collectors around the sun to absorb the starlight, not that they would form a continuous shell. Rather, the shell would consist of independently orbiting structures, around a million kilometres thick and containing more than 1x10^5 objects. Consequently, a "Dyson sphere" could consist of solar captors in any number of possible configurations. In a Dyson swarm model, there would be a myriad of solar panels situated in various orbits. It's generally agreed that this would be the best approach. Another plausible idea is that of the Dyson bubble in which solar sails, as well as solar panels, would be put into place and balanced by gravity and the solar wind pushing against it.∂ For the purposes of this discussion, I'm going to propose that we build a Dyson swarm (sometimes referred to as a type I Dyson sphere), which will consist of a large number of independent constructs orbiting in a dense formation around the sun. The advantage of this approach is that such a structure could be built incrementally. Moreover, various forms of wireless energy transfer could be used to transmit energy between its components and the Earth.∂ Megascale construction∂ So, how would we go about the largest construction project ever undertaken by humanity?∂ As noted, a Dyson swarm can be built gradually. And in fact, this is the approach we should take. The primary challenges of this approach, however, is that we will need advanced materials (which we still do not possess, but will likely develop in the coming decades thanks to nanotechnology), and autonomous robots to mine for materials and build the panels in space.∂ Now, assuming that we will be able to overcome these challenges in the next half-decade or so-which is not too implausible- how could we start the construction of a Dyson sphere?∂ Oxford University physicist [Stuart Armstrong](http://www.fhi.ox.ac.uk/our_staff/research/stuart_armstrong) has [devised a rather ingenious and startling simple plan](http://www.youtube.com/watch?feature=player_embedded&v=zQTfuI-9jIo) for doing so-one which he claims is almost within humanity's collective skill-set. Armstrong's plan sees five primary stages of construction, which when used in a cyclical manner, would result in increasingly efficient, and even exponentially growing, construction rates such that the entire project could be completed within a few decades.∂ Broken down into five basic steps, the construction cycle looks like this:∂ 1. Get energy 2. Mine Mercury 3. Get materials into orbit 4. Make solar collectors 5. Extract energy∂ The idea is to build the entire swarm in iterative steps and not all at once. We would only need to build a small section of the Dyson sphere to provide the energy requirements for the rest of the project. Thus, construction efficiency will increase over time as the project progresses. "We could do it now," says Armstrong. It's just a question of materials and automation.∂ And yes, you read that right: we're going to have to mine materials from Mercury. Actually, we'll likely have to take the whole planet apart. The Dyson sphere will require a horrendous amount of material-so much so, in fact, that, should we want to completely envelope the sun, we are going to have to disassemble not just Mercury, but Venus, some of the outer planets, and any nearby asteroids as well.∂ Why Mercury first? According to Armstrong, we need a convenient source of material close to the sun. Moreover, it has a good base of elements for our needs. Mercury has a mass of 3.3x10^23 kg. Slightly more than half of its mass is usable, namely iron and oxygen, which can be used as a reasonable construction material (i.e. hematite). So, the useful mass of Mercury is 1.7x10^23 kg, which, once mined, transported into space, and converted into solar captors, would create a total surface area of 245g/m2. This Phase 1 swarm would be placed in orbit around Mercury and would provide a reasonable amount of reflective surface area for energy extraction.∂ There are five fundamental, but fairly conservative, assumptions that Armstrong relies upon for this plan. First, he assumes it will take ten years to process and position the extracted material. Second, that 51.9% of Mercury's mass is in fact usable. Third, that there will be 1/10 efficiency for moving material off planet (with the remainder going into breaking chemical bonds and mining). Fourth, that we'll get about 1/3 efficiency out of the solar panels. And lastly, that the first section of the Dyson sphere will consist of a modest 1 km2 surface area.∂ And here's where it gets interesting: Construction efficiency will at this point start to improve at an exponential rate.∂ Consequently, Armstrong suggests that we break the project down into what he calls "ten year surges." Basically, we should take the first ten years to build the first array, and then, using the energy from that initial swarm, fuel the rest of the project. Using such a schema, Mercury could be completely dismantled in about four ten-year cycles. In other words, we could create a Dyson swarm that consists of more than half of the mass of Mercury in forty years! And should we wish to continue, if would only take about a year to disassemble Venus.∂ And assuming we go all the way and envelope the entire sun, we would eventually have access to 3.8x10^26 Watts of energy.∂ Dysonian existence∂ Once Phase 1 construction is complete (i.e. the Mercury phase), we could use this energy for other purposes, like megascale supercomputing, building mass drivers for interstellar exploration, or for continuing to build and maintain the Dyson sphere.∂ Interestingly, Armstrong would seem to suggest that this might be enough energy to serve us. But other thinkers, like Sandberg, suggest that we should keep going. But in order for us to do so we would have to deconstruct more planets. Sandberg contends that both the inner and outer solar system contains enough usable material for various forms of Dyson spheres with a complete 1 AU radius (which would be around 42 kg/m2 of the sphere). Clearly, should we wish to truly attain Kardashev II status, this would be the way to go.∂ And why go all the way? Well, it's very possible that our appetite for computational power will become quite insatiable. It's hard to predict what a post-Singularity or post-biological civilization would do with so much computation power. Some ideas include ancestor simulations, or even creating virtual universes within universes. In addition, an advanced civilization may simply want to create as many positive individual experiences as possible (a kind of utilitarian imperative). Regardless, digital existence appears to be in our future, so computation will eventually become our most valuable and sought after resource.∂ That said, whether we build a small array or one that envelopes the entire sun, it seems clear that the idea of constructing a Dyson sphere should no longer be relegated to science fiction or our dreams of the deep future. Like other speculative projects, like the space elevator or terraforming Mars, we should seriously consider putting this alongside our other near-term plans for space exploration and work.∂ And given the progressively worsening condition of Earth and our ever-growing demand for living space and resources, we may have no other choice.