# 1NC vs Southlake Carrol PK

## OFF

### 1NC - OFF

T-Outer Space

#### Interpretation: Topical affirmatives must defend the appropriation of outer space

#### Outer space starts 372 miles above the surface of earth.

National Geographic No Date [National Geographic Society, "Atmosphere," <https://www.nationalgeographic.org/encyclopedia/atmosphere/>] Sachin

Earth’s atmosphere stretches from the surface of the planet up to as far as 10,000 kilometers (6,214 miles) above. After that, the atmosphere blends into space. Not all scientists agree where the actual upper boundary of the atmosphere is, but they can agree that the bulk of the atmosphere is located close to Earth’s surface—up to a distance of around eight to 15 kilometers (five to nine miles). While oxygen is necessary for most life on Earth, the majority of Earth’s atmosphere is not oxygen. Earth’s atmosphere is composed of about 78 percent nitrogen, 21 percent oxygen, 0.9 percent argon, and 0.1 percent other gases. Trace amounts of carbon dioxide, methane, water vapor, and neon are some of the other gases that make up the remaining 0.1 percent. The atmosphere is divided into five different layers, based on temperature. The layer closest to Earth’s surface is the troposphere, reaching from about seven and 15 kilometers (five to 10 miles) from the surface. The troposphere is thickest at the equator, and much thinner at the North and South Poles. The majority of the mass of the entire atmosphere is contained in the troposphere—between approximately 75 and 80 percent. Most of the water vapor in the atmosphere, along with dust and ash particles, are found in the troposphere—explaining why most of Earth’s clouds are located in this layer. Temperatures in the troposphere decrease with altitude. The stratosphere is the next layer up from Earth’s surface. It reaches from the top of the troposphere, which is called the tropopause, to an altitude of approximately 50 kilometers (30 miles). Temperatures in the stratosphere increase with altitude. A high concentration of ozone, a molecule composed of three atoms of oxygen, makes up the ozone layer of the stratosphere. This ozone absorbs some of the incoming solar radiation, shielding life on Earth from potentially harmful ultraviolet (UV) light, and is responsible for the temperature increase in altitude. The top of the stratosphere is called the stratopause. Above that is the mesosphere, which reaches as far as about 85 kilometers (53 miles) above Earth’s surface. Temperatures decrease in the mesosphere with altitude. In fact, the coldest temperatures in the atmosphere are near the top of the mesosphere—about -90°C (-130°F). The atmosphere is thin here, but still thick enough so that meteors will burn up as they pass through the mesosphere—creating what we see as “shooting stars.” The upper boundary of the mesosphere is called the mesopause. The thermosphere is located above the mesopause and reaches out to around 600 kilometers (372 miles). Not much is known about the thermosphere except that temperatures increase with altitude. Solar radiation makes the upper regions of the thermosphere very hot, reaching temperatures as high as 2,000°C (3,600°F). The uppermost layer, that blends with what is considered to be outer space, is the exosphere. The pull of Earth’s gravity is so small here that molecules of gas escape into outer space.

#### Starlink’s satelites reach 340 Miles above earth’s surface.

Mann 19, [Adam Mann, 5-24-2019, "Starlink: SpaceX's satellite internet project," Space, <https://www.space.com/spacex-starlink-satellites.html>] Sachin

The first 60 Starlink satellites were launched on May 23, 2019, aboard a SpaceX Falcon 9 rocket. The satellites successfully reached their operational altitude of 340 miles (550 kilometers) — low enough to get pulled down to Earth by atmospheric drag in a few years so that they don't become space junk once they die.

#### Violation: 340 miles is less than the 372 miles necessary to be considered outer space; they explicitly defend only LEO

#### Vote neg:

#### 1] Limits and ground: the aff interpretation explodes the topic to allow any aff about space generally which structurally alters the neg research burden because there’s a qualitative difference between outer space and the atmosohere. Means we get no ground bc of how unpredictable the AC could be from round to round – kills core neg generics like space col bad and mining that don’t link if you specify a part of space

#### Use competing interps - Topicality is a binary question, you can’t be reasonably topical and it invites a race to the bottom of intervention

#### Drop the debater – dropping the argument doesn’t rectify abuse since winning T proves why we don’t have the burden of rejoinder against their aff.

#### No RVIS – it’s your burden to be topical

### 1NC - OFF

Unilat CP

#### The United States federal government should:

#### --Substantially increase active debris removal

#### --Should declare debris in space to be abandoned property, with the right to salvage, and make our expired satellites available for salvage

#### -- Contributing to debris removal projects and establishing a space situational awareness catalogue that requires satellite declassification and notice in the case of impending collision with the governments of formal allies of the United States

#### --ensure standardization and integration of all shared space situational awareness data.

#### Unilat solves comparatively much better than international cooperation for ADR---maintains leadership

--coop takes too long – proposed debris review in 1980 thru COPOUS and nothing happened

--timeframe is key – need to start now which flips solvency

--sufficiency - could remove 5 pieces now and make enviro more stable

--causes follow on – once we have the tech, others realize it’s feasible and do it too

--leadership is a nb – we are seen as taking moral highground to clean up

Ansdell 10 – PhD in Astronomy-U of Hawaii, MA in Space Policy-GWU

Megan Ansdell, Post-doctoral Fellow in the Center for Integrative Planetary Sciences-UC Berkeley, PhD in Astronomy-U of Hawaii, MA in International Science and Technology Policy focusing on Space Policy from the GWU Elliott School of International Affairs, MSc in Space Management-International Space University, BA in Astrophysics-U of St. Andrews, former Space Policy Research Assistant-Space Policy Institute and Space Policy Intern in NASA’s Exploration Systems Mission Directorate, Active Space Debris Removal: Needs, Implications, and Recommendations for Today’s Geopolitical Environment, J. Public Int. Aff., 21 (2010), pp. 7-22, ftp://ftp.laserk.com/pub/Plenary%20session/Space-Debris-Removal.pdf

US Leadership by Example

Need to Initiate Unilateral Action

International cooperation in space has rarely resulted in cost-effective or expedient solutions, especially in politically-charged areas of uncertain technological feasibility. The International Space Station, because of both political and technical setbacks, has taken over two decades to deploy and cost many billions of dollars—far more time and money than was originally intended. Space debris mitigation has also encountered aversion in international forums. The topic was brought up in COPUOS as early as 1980, yet a policy failed to develop despite a steady flow of documents on the increasing danger of space debris (Perek 1991). In fact, COPUOS did not adopt debris mitigation guidelines until 2007 and, even then, they were legally non-binding.

Space debris removal systems could take decades to develop and deploy through international partnerships due to the many interdisciplinary challenges they face. Given the need to start actively removing space debris sooner rather than later to ensure the continued benefits of satel- lite services, international cooperation may not be the most appropriate mechanism for instigating the first space debris removal system. Instead, one country should take a leadership role by establishing a national space debris removal program. This would accelerate technology development and demonstration, which would, in turn, build-up trust and hasten international participation in space debris removal.

POSSIBILITIES OF LEADERSHIP

As previously discussed, a recent NASA study found that annually removing as little as five massive pieces of debris in critical orbits could significantly stabilize the long-term space debris environment (Liou and Johnson 2007). This suggests that it is feasible for one nation to unilaterally develop and deploy an effective debris removal system. As the United States is responsible for creating much of the debris in Earth’s orbit, it is a candidate for taking a leadership role in removing it, along with other heavy polluters of the space environment such as China and Russia.

There are several reasons why the United States should take this leadership role, rather than China or Russia. First and foremost, the United States would be hardest hit by the loss of satellites services. It owns about half of the roughly 800 operating satellites in orbit and its military is significantly more dependent upon them than any other entity (Moore 2008). For example, GPS precision-guided munitions are a key component of the “new American way of war” (Dolman 2006, 163-165), which allows the United States to remain a globally dominant military power while also waging war in accordance with its political and ethical values by enabling faster, less costly war fighting with minimal collateral damage (Sheldon 2005). The U.S. Department of Defense recognized the need to protect U.S. satellite systems over ten years ago when it stated in its 1999 Space Policy that, “the ability to access and utilize space is a vital national interest because many of the activities conducted in the medium are critical to U.S. national security and economic well-being” (U.S. Department of Defense 1999, 6). Clearly, the United States has a vested interest in keeping the near-Earth space environment free from threats like space debris and thus assuring U.S. access to space

Moreover, current U.S. National Space Policy asserts that the United States will take a “leadership role” in space debris minimization. This could include the development, deployment, and demonstration of an effective space debris removal system to remove U.S. debris as well as that of other nations, upon their request. There could also be international political and economic advantages associated with being the first country to develop this revolutionary technology. However, there is always the danger of other nations simply benefiting from U.S. investment of its resources in this area. Thus, mechanisms should also be created to avoid a classic “free rider” situation. For example, techniques could be employed to ensure other countries either join in the effort later on or pay appropriate fees to the United States for removal services.

Recommendations for Leadership in Space Debris Removal

Going forward, the U.S. government should engage the commercial sector in space debris removal. Government contracts with several commercial firms would create a competitive environment, encouraging innovation and cost minimization. Having several companies working on the problem at the same time would also accelerate remediation as several critical orbits could be addressed at once. Furthermore, early investments in a domestic space debris removal industry would give the United States a head start in what may become a critical industry over the coming decades.

#### Causes international follow on --- Russia and China will go along separately later

--Russia and China will go along – otherwise they’d be pariahs and feel left out

Hays & Vedda 18 – Sr. Space Policy Analyst-Principal DOD Space Advisor Staff & Prof of Space Policy-GWU; Sr. Policy Analyst-Center for Space Policy & former Prof of Space & IR-UND

Dr. Peter L. Hays, Senior Space Policy Analyst with Falcon Research supporting the Principal Department of Defense Space Advisor Staff where he helps to develop and implement space policy and strategy initiatives, adjunct professor at GWU’s Space Policy Institute, Associate Director of the Eisenhower Center for Space and Defense Studies, former Senior Policy Analyst for the National Security Space Office in the U.S. Department of Defense, Visiting Fellow at the Institute for National Strategic Studies at National Defense University & at the USAF Academy School of Advanced Airpower Studies, and Executive Editor of *Joint Force Quarterly*, PhD in IR-Fletcher School at Tufts, and Dr. James A. Vedda, Senior Policy Analyst in the Center for Space Policy and Strategy at The Aerospace Corporation, Co-founder & former Professor in the Department of Space Studies at the University of North Dakota, has been responsible for performing policy research and analyses for various U.S. government customers, including NASA, the Federal Aviation Administration, the Department of Commerce, the Air Force, and the National Geospatial-Intelligence Agency, among others, formerly worked at ANSER Inc. where he supported the Space Policy Directorate in the Office of the Secretary of Defense, PhD in PoliSci-U of F, MA in Science, Tech & Public Policy-GW, MAJOR POLICY ISSUES IN EVOLVING GLOBAL SPACE OPERATIONS, Study by The Mitchell Institute for Aerospace Studies in collaboration with The Aerospace Corporation's Center for Space Policy and Strategy, Interviewing a range of anonymous senior decisionmakers in the commercial space industry & government, 2018, https://aerospace.org/sites/default/files/2018-05/Space\_Policy\_FINAL\_interactive\_0.pdf

“The US government should support the development of best practices by following the lead of US commercial corporations, which have great sway internationally. For example, in human spaceflight, it is likely that US companies will lead the way in sub-orbital and orbital flights at least over the next decade. Coordination is already taking place among these companies in this regard. Similarly, asteroid mining companies are already coordinating informally on norms. The US Government could endorse these processes and begin to support these norms through its policy statements (such as the National Space Policy), enlisting other governments and their corporations to support them as well. Over time, if the bulk of Western governments and their corporations adopt such standards, China, Russia, and other possible outliers will likely find it beneficial to eventually join them. This may be easier than a straight political process.”

#### US commercial space leadership is necessary and sufficient to solve global Chinese dominance

--CP promulgates a set of standards initiated by the US – makes us first mover and shores up commercial space leadership

--China will dominate space and use it to create a new era of heg – need to have leadership and strong commercial sector

--will get to space and control info flows – selling satellites for cheap to poorest and broadcasting lies about US + shielding events in Tibet – undermines US cred and soft power

--will also get huge money from space and do sbsp – means they’ll have free energy to hold over the rest of the world

--Commercial sector key – need creative disruption, not bureaucracy and groupthink of the DOD to get to space quicker and more innovatively

Autry and Kwast 19 – Director of the Southern California Commercial Spaceflight Initiative-USC, PhD & former Prof of Entrepreneurship & Strategy-UC Irvine; Lt. Gen & Cmdr-USAF, Prof-Air University

Greg Autry, PhD & MBA-UC Irvine, Director of the Southern California Commercial Spaceflight Initiative-USC, served on the NASA Agency Review Team and as White House Liaison at NASA, former Professor of Entrepreneurship, Strategy, & Econ-UC Irvine, on the editorial board of the New Space Journal, co-author of Death by China, Beijing’s Fight for the Final Frontier, and Steven L. Kwast, Lt Gen-USAF, Commander & President of Air University-Maxwell AFB, MA in Public Policy-Harvard's Kennedy School of Government, former National Defense Fellow-Institute for the Study of Conflict, Ideology and Policy at Boston University, America Is Losing the Second Space Race to China, 22 August 2019, https://foreignpolicy.com/2019/08/22/america-is-losing-the-second-space-race-to-china/

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

Keck 14

Zachary Keck is Managing Editor of The Diplomat, The Diplomat, January 24, 2014, “America’s Relative Decline: Should We Panic?”, http://thediplomat.com/2014/01/americas-relative-decline-should-we-panic/

Regardless of your opinion on U.S. global leadership over the last two decades, however, there is good reason to fear its Regardless of your opinion on U.S. global leadership over the last two decades, however, there is good reason to fear its relative decline compared with China and other emerging nations. To begin with, hegemonic transition periods have historically been the most destabilizing eras in history. This is not only because of the malign intentions of the rising and established power(s). Even if all the parties have benign, peaceful intentions, the rise of new global powers necessitates revisions to the “rules of the road.” This is nearly impossible to do in any organized fashion given the anarchic nature of the international system, where there is no central authority that can govern interactions between states.

We are already starting to see the potential dangers of hegemonic transition periods in the Asia-Pacific (and arguably the Middle East). As China grows more economically and militarily powerful, it has unsurprisingly sought to expand its influence in East Asia. This necessarily has to come at the expense of other powers, which so far has primarily meant the U.S., Japan, Vietnam and the Philippines. Naturally, these powers have sought to resist Chinese encroachments on their territory and influence, and the situation grows more tense with each passing day. Should China eventually emerge as a global power, or should nations in other regions enjoy a similar rise as Kenny suggests, this situation will play itself out elsewhere in the years and decades ahead.

All of this highlights some of the advantages of a unipolar system. Namely, although the U.S. has asserted military force quite frequently in the post-Cold War era, it has only fought weak powers and thus its wars have been fairly limited in terms of the number of casualties involved. At the same time, America’s preponderance of power has prevented a great power war, and even restrained major regional powers from coming to blows. For instance, the past 25 years haven’t seen any conflicts on par with the Israeli-Arab or Iran-Iraq wars of the Cold War. As the unipolar era comes to a close, the possibility of great power conflict and especially major regional wars rises dramatically. The world will also have to contend with conventionally inferior powers like Japan acquiring nuclear weapons to protect their interests against their newly empowered rivals.

But even if the transitions caused by China’s and potentially other nations’ rises are managed successfully, there are still likely to be significant negative effects on international relations. In today’s “globalized” world, it is commonly asserted that many of the defining challenges of our era can only be solved through multilateral cooperation. Examples of this include climate change, health pandemics, organized crime and terrorism, global financial crises, and the proliferation of weapons of mass destruction, among many others.

A unipolar system, for all its limitations, is uniquely suited for organizing effective global action on these transnational issues. This is because there is a clear global leader who can take the initiative and, to some degree, compel others to fall in line. In addition, the unipole’s preponderance of power lessens the intensity of competition among the global players involved. Thus, while there are no shortages of complaints about the limitations of global governance today, there is no question that global governance has been many times more effective in the last 25 years than it was during the Cold War

#### Data-sharing with allies solves the aff

Loverro 14 – Deputy Assistant Secretary of Defense for Space Policy, Department of Defense

Douglas L., 3/12. “STATEMENT OF MR. DOUGLAS L. LOVERRO DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR SPACE POLICY BEFORE THE SENATE COMMITTEE ON ARMED SERVICES SUBCOMMITTEE ON STRATEGIC FORCES.” https://www.armed-services.senate.gov/download/loverro\_03-12-14

Our efforts here go beyond mere words – they are backed by actions. As I have discussed before, a key aspect of improving spaceflight safety, and assuring we can monitor the space environment more closely, is our space situational awareness (SSA) capabilities. We have been working on this for some time, and I am happy to report that we have made some real progress over the last year. That progress comes in two forms – new sensors and information sharing agreements.

On the sensor front, we have remained on a constant path for the last several years to reposition sensors where they can do the most good and to invest in new sensors where needed. Last year we reported that we had entered into an agreement with Australia to relocate and repurpose a launch tracking radar, the C-Band radar, from Antigua to western Australia to aid in our ability to monitor activities at low altitude in the southern hemisphere. That work is now underway. We complemented that effort with a second agreement signed with Australia this past November to relocate the DARPA-developed Space Surveillance Telescope to western Australia to give us an unmatched ability to track deep space objects in that critical region of the world. Additionally, after years of focused effort, and a sequestration-imposed six-month delay, we will soon award the contract for the first Space Fence site. The Space Fence will provide an unprecedented ability to track an order-of-magnitude greater number of objects in low earth orbit, supporting long-term spaceflight safety.

The Department has also made great strides in more transparently sharing SSA information with other space operators. Over the past year, U.S. Strategic Command (USSTRATCOM) has continued to pursue SSA sharing agreements with commercial companies and foreign governments, consistent with existing legislative authority. This year, USSTRATCOM signed five agreements with other governments – Australia, Japan, Italy, Canada, and France – and increased to forty-one our agreements with commercial satellite operators. Many more agreements are in varying stages of negotiation. We are committed to providing SSA services to enhance spaceflight safety for all.

While the purpose of these agreements is to allow us to share more advanced space flight safety products with other space-faring nations, they really serve to lay the groundwork for the next stage of effort – two-way data sharing. The space environment is too big and too complex for a single nation to bear the entire cost of monitoring it. Cost-effective SSA requires cooperation among space actors. The increasingly congested space environment means that an unparalleled level of information sharing is needed to promote safe and responsible operations in space and to reduce the likelihood of mishaps, misperceptions, and mistrust. We are currently engaged in detailed technical discussions with several nations that have space situational awareness capabilities to explore opportunities for two-way information exchange. This type of sharing will increase SSA information available to the United States while limiting unnecessary duplication of SSA capabilities. In short, we save money and improve safety for us and our allies.

### 1NC - OFF

Cyber DA

#### Cyber attacks on critical infrstructure are coming now

Underwood 20 [Kimberly Underwood is a reporter on emerging communication technologies, cyberwarfare, the intelligence community, military command operations and weaponry research. “China is Retooling, and Russia Seeks Harm to Critical Infrastructure.” June 24, 2020. https://www.afcea.org/content/china-retooling-and-russia-seeks-harm-critical-infrastructure]

Intelligence leader warns of the mounting threats of cyber espionage, digital attacks and influence operations from adversaries. U.S. adversaries are trying to take control of cyberspace as a medium, resulting in implications to our freedom of maneuver and access in cyberspace, says Brig. Gen. Gregory Gagnon, USAF, director of Intelligence (A2), Headquarters Air Combat Command (ACC), Joint Base Langley-Eustis. Increasing cyberspace activity is coming from China, Russia, Iran and North Korea. “We are seeing it not just in volume, but we are seeing an expansion in the ways that they use cyberspace, whether it is to steal information, whether it is to directly influence our citizens or whether it is to disrupt critical infrastructure,” Gen. Gagnon reports. The general spoke at the AFCEA Tidewater chapter’s recent monthly virtual luncheon. China and Russia continue to pose the greatest espionage and cyber attack threats to the United States, but the intelligence leader anticipates that other adversaries and strategic competitors will also build and integrate cyber espionage, cyber attacks and influence operations into how they conduct business. “Our strategic competitors will increasingly use cyber space capabilities including cyber espionage, cyber attack and continued influence operations to seek political, economic and military advantage over the United States, our allies and our partners,” he said. “This is not an ‘if,’ it is a yes. They are doing it and they will continue.” Gen. Gagnon warned that China in particular is using cyber espionage to collect intelligence, target critical infrastructure and steal intellectual property. It is all part of China’s plan to move from being a regional actor to being seen as a global power. The shift also means a greater role for the adversary’s military. The Chinese military is in the process of transitioning from a defensive, inflexible ground-based force charged with domestic and peripheral security to a joint, highly agile, expeditionary and power projecting arm of Chinese foreign policy, he noted. “What is going on in China is a dynamic revectoring of the objectives and goals of the People's Liberation Army,” Gen. Gagnon said. “This is not a small change. This is a major change in course and direction. They're doing it to be a power projection arm of a Chinese foreign policy that engages both in military diplomacy and operations around the globe, but also in predatory economic activity.” Moreover, China’s military spending in 2018 exceeded $200 billion, an increase of about 300% since 2002, the general stated. And while it is not the $750 billion that the United States government spends every year on military defense, the Chinese funding does not reflect the same level of investment in manpower or healthcare. A good portion of their $200 billion directly funds technology and capabilities. “A big chunk of our budget is not buying kit,” Gen. Gagnon explained. “If you're the CCP [Chinese Communist Party], you don't have the same extensive retirement programs that you have to pay for,” he said. “You don't have this extensive healthcare which you have to provide. So, when you think about $200 billion, think about that buying kit and buying operations. That is significant.” To the industry, Gen. Gagnon warned companies that Beijing will authorize Chinese espionage against key U.S technologies. “Many of your corporations hold this technology,” he stressed. “They are trying to undercut your ability to be profitable by developing those same technologies in China. They are competing against us in the international market. I will tell you that China's persistent cyber espionage threat and their growing tech threat to our core military and critical infrastructure will continue to be persistent. China remains the most active strategic competitor responsible for cyber espionage against corporations and allies.” China, like Russia, is also increasing its information warfare against the United States. “They are becoming more adept at using social media to deliver messages directly to the U.S. population that alter the way we think, the way we behave and the way we decide,” the general observed. The improvement of their cyber attack capabilities and ways to alter information online is intended to shape views inside China, shift the mindset of Chinese people around the world, as well as to try to shape the world’s view, not just of China, but also of the United States. “You are seeing that play out in the pandemic, how people view us around the world,” he offered. “We're also concerned about Chinese intelligence and security services,” the A2 continued. “They use Chinese information technology firms as routine and systemic espionage platforms against the United States and against our allies. Many of you are tracking what is in the news about 5G and Huawei, and that's what we're talking about.” As for Russia, their highly capable operations of cyber espionage, influence and cyber attacks continue to target the United States and its allies. In particular, Russia’s form of integrating cyber espionage attacks and influence operations, or information confrontation, is very effective, Gen. Gagnon emphasized. “If you think about it, they’re generally playing with the weaker hand, so they have been rather brilliant on the international stage in achieving their foreign policy objectives,” he said. In addition, Moscow is staging cyberattack assets to disrupt or damage U.S. military or civilian information systems during the COVID-19 pandemic. “There is activity that they undertake on a day-to-day basis to try to gain a decisive military intelligence,” he stated. “Their security services continue to target our systems, both for U.S. information systems and critical infrastructure, as well as the networks of our NATO and Five-Eye partners. They do it for positional advantage in cyberspace to be able to do the five Ds: deceive, deny, disrupt, degrade and destroy our assets, but also to gain intelligence on how systems are established and set up so that they can maintain attack vectors.” Russia also is targeting U.S. critical infrastructure, the general cautioned. “Russia has the ability to execute cyber attacks in the United States that can generate localized temporary disruptive effects on critical infrastructure, such as disrupting electric distribution networks for at least a few hours.” In fact, he warned, Moscow is mapping out critical infrastructure with the long-term goal of being able to cause “substantial damage.”

#### Megaconstellations function as critical infrastructure that increase resiliency and protect against cyberattacks

Hallex and Cottom 20 [Matthew A. Hallex is a Research Staff Member at the Institute for Defense Analyses. Travis S. Cottom is a Research Associate at the Institute for Defense Analyses. “Proliferated Commercial Satellite Constellations: Implications for National Security.” 2020. https://ndupress.ndu.edu/Portals/68/Documents/jfq/jfq-97/jfq-97\_20-29\_Hallex-Cottom.pdf?ver=2020-03-31-130614-940]

While potentially threatening the sustainability of safe orbital operations, new proliferated constellations also offer opportunities for the United States to increase the resilience of its national security space architectures. Increasing the resilience of U.S. national security space architectures has strategic implications beyond the space domain. Adversaries such as China and Russia see U.S. dependence on space as a key vulnerability to exploit during a conflict. Resilient, proliferated satellite constellations support deterrence by denying adversaries the space superiority they believe is necessary to initiate and win a war against the United States.28 Should deterrence fail, these constellations could provide assured space support to U.S. forces in the face of adversary counterspace threats while imposing costs on competitors by rendering their investments in counterspace systems irrelevant. Proliferated constellations can support these goals in four main ways. First, the extreme degree of disaggregation inherent in government and commercial proliferated constellations could make them more resilient to attacks by many adversary counterspace systems. A constellation composed of hundreds or thousands of satellites could withstand losing a relatively large number of them before losing significant capability. Conducting such an attack with kinetic antisatellite weapons—like those China and Russia are developing—would require hundreds of costly weapons to destroy satellites that would be relatively inexpensive to replace. Second, proliferated constellations would be more resilient to adversary electronic warfare. Satellites in LEO can emit signals 1,280 times more powerful than signals from satellites in GEO.29 They JFQ 97, 2nd Quarter 2020 Hallex and Cottom 25 also are faster in the sky than satellites in more distant orbits, which, combined with the planned use of small spot beams for communications proliferated constellations, would shrink the geographic area in which an adversary ground-based jammer could effectively operate, making jammers less effective and easier to geolocate and eliminate.30 Third, even if the United States chooses not to deploy national security proliferated constellations during peacetime, industrial capacity for mass-producing proliferated constellation satellites could be repurposed during a conflict. Just as Ford production lines shifted from automobiles to tanks and aircraft during World War II, one can easily imagine commercial satellite factories building military reconnaissance or communications satellites during a conflict. Fourth, deploying and maintaining constellations of hundreds or thousands of satellites will drive the development of low-cost launches to a much higher rate than is available today. Inexpensive, high-cadence space launch could provide a commercial solution to operationally responsive launch needs of the U.S. Government. In a future where space launches occur weekly or less, the launch capacity needed to augment national security space systems during a crisis or to replace systems lost during a conflict in space would be readily available.31

#### Cyberattacks cause extinction---false warnings, stealing nukes, and introducing vulnerability

Ernest J. Moniz et al. 18, Ernest J. Moniz is the CEO of the Nuclear Threat Initiative, served as the thirteenth United States Secretary of Energy from 2013 to January 2017. Sam Nunn, and Des Browne, September 2018, “Nuclear Weapons in the New Cyber Age,” https://media.nti.org/documents/Cyber\_report\_finalsmall.pdf

The Cyber Threat to Nuclear Weapons and Related Systems

Cyber-based threats target all sectors of society—from the financial sector to the entertainment industry, from department stores to insurance companies. Governments face an even more critical challenge when it comes to cyberattacks on their most critical systems. Attacks on critical infrastructure could have extraordinary consequences, but a successful cyberattack3 on a nuclear weapon or related system—a nuclear weapon, a delivery system, or the related Nuclear Command, Control, and Communications (NC3) systems—could have existential consequences. Cyberattacks could lead to false warnings of attack, interrupt critical communications or access to information, compromise nuclear planning or delivery systems, or even allow an adversary to take control of a nuclear weapon.

Given the level of digitization of U.S. systems and the pace of the evolving cyber threat, one cannot assume that systems with digital components—including nuclear weapons systems—are not or will not be compromised. Among the reasons: nuclear weapons and delivery systems are periodically upgraded, which may include the incorporation of new digital systems or components. Malware could be introduced into digital systems during fabrication, much of which is not performed in secure foundries. In addition, there are a range of external dependencies, such as connections to the electric grid, that are outside the control of defense officials but directly affect nuclear systems. Finally, the possibility always exists that an insider, either purposefully or accidentally, could enable a cybersecurity lapse by introducing malware into a critical system.

Increased use of digital systems may also adversely affect the survivability of nuclear systems. New technologies can enhance reliability and performance, but they can also lead to new vulnerabilities in traditionally survivable systems, such as submarines or mobile missile launchers.4

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French Elections DA

#### 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.”

#### Macron’s initiatives cultivate the commercial space industry --- specifically internet megaconstellations and satellite tech

Selding 15 [Peter Selding, Paris bureau chief for SpaceNews. “France Unveils Commercial Space Investment Initiative.” Sept. 11, 2015. https://spacenews.com/france-unveils-commercial-space-investment-initiative/]

PARIS — The French government on Sept. 11 said it is investing in technologies to position French industry to win contracts building low-orbiting satellite Internet-delivery constellations, a new generation of high-resolution optical Earth observation satellites and proposed high-throughput broadband satellites in geostationary orbit. The investments make good on a promise by government officials that after three years of near-obsessive focus on launch vehicles leading to the next-generation Ariane 6 rocket, French attention would turn to satellites. French Economics and Industry Minister Emmanuel Macron said the proposed spending — in high-end Earth observation and in both high- and low-orbiting telecommunications satellites — is designed to enhance French industry’s “acceleration and competitiveness” on world markets. Reaction time is as important as technical prowess, he said. Macron made his remarks at a briefing here following a meeting of the CoSpace government-industry grouping, which attempts to coordinate government and industry strategy. CoSpace is presided over by the French economics, defense and research ministers. The French space agency, CNES, which has a civil and military role, and the French aerospace industries association, GIFAS, set the investment agenda. The focus on Ariane 6 was driven by a fear that SpaceX of Hawthorne, California, would threaten the commercial launch dominance of the French-led Arianespace consortium. In satellites, France wants to counter the strength of DigitalGlobe of Westminster, Colorado, whose multibillion-dollar, 10-year contract with the U.S. government allows the company to invest in high-cost, very-high-resolution Earth imaging satellites that have taken a large share of the global commercial market. The focus on satellite-delivered Internet is designed to prevent Boeing Space and Intelligence Systems of El Segundo, California, now allied with ViaSat Inc. of Carlsbad, California, and Space Systems/Loral of Palo Alto, California, from using their U.S. base to sell high-throughput broadband satellite systems worldwide, to the detriment of Europe’s Airbus Defence and Space and Thales Alenia Space. Three distinct initiatives were announced after the CoSpace meeting: • CNES has contracted with Airbus Defence and Space and Thales Alenia Space to conduct 18 months of design work on a next-generation high-resolution optical imaging system that, like France’s current two-satellite Pleiades system, would serve commercial and military customers. The contract, valued at around 15 million euros ($16.5 million), allows a joint Airbus-Thales team to refine work already done in CNES’s OTOS — Super-Resolution Optical Earth Observation — program. Airbus will lead work on the satellite platform, with Thales Alenia Space managing work on the payload. Both companies are also building the French Defense Ministry’s two-satellite CSO system, to succeed today’s Helios imaging satellites in the coming years. Airbus and Thales Alenia Space are increasingly competing to win Earth observation satellite orders on export markets despite having worked jointly on France’s Spot civil and Helios military spacecraft since the mid-1980s, and more recently on Pleiades. Airbus has a division that competes directly with DigitalGlobe and has watched as the U.S. company, most recently with 30-centimeter-resolution imagery, has walked away with much of the very-high-resolution end of the market. A DigitalGlobe 30-centimeter natural color image of San Diego. Credit: DigitalGlobe A DigitalGlobe 30-centimeter natural color image of San Diego. Credit: DigitalGlobe • The French government has agreed to use 30 million euros from its PIA, or Investing in the Future, public bond fund to promote technologies needed for low-orbiting constellations of Internet-delivery satellites. Another 5 million euros has been added from the European Space Agency’s Artes technology program. Much of this investment would appear directed at work to be done as part of OneWeb Ltd.’s announced 900-satellite constellation, for which Airbus has been selected as prime contractor. OneWeb, based in Britain’s Channel Islands, and Airbus are expected to decide in the coming weeks on a U.S. location to build their jointly owned satellite manufacturing plant. Thales Alenia Space has been working closely with another proposed constellation, called LeoSat, whose current status is less clear. • CoSpace has agreed to propose, along with satellite fleet operator Eutelsat of Paris, that the European Union’s Juncker development fund be used to build three or four large geostationary-orbit high-throughput satellites to be launched around 2020. The satellites, each with 250 gigabits per second of throughput, would provide 30-50 megabits per second of bandwidth to individual European homes and small businesses that are not connected to the terrestrial broadband grid. The CoSpace proposal will be presented to the European Commission in November, with a decision expected in mid-2016. If approved, financing would be provided through loans from the European Investment Bank. Jean-Francois Bureau, director of international and institutional affairs at satellite operator Eutelsat, said the project’s goal is to place into operation a satellite system whose cost — construction, launch, insurance and gateway Earth stations — would not exceed 1million euros per gigabit of throughput capacity. Bureau said many details of the system’s business model have yet to be settled and would be the focus of discussion between Paris-based Eutelsat, the French government and French satellite manufacturers.

#### 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]

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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.