# Off Case

### Off 1

#### Innovation high now but aff trades off

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Every once in a while, a confluence of discoveries, events and initiatives results in a breakthrough so significant that it propels the entire world to a higher level, redefining what is possible in so many different fields. This breakthrough is taking centerstage now, as the new era of space exploration — catalyzed by increasing launch access — dawns upon us. The surge of innovation that comes with this will create new opportunities and inspire the next generation of doers. When this happens, boundaries between scientific and social impact are blurred. Innovation leading to scientific discovery can benefit society in the same way that social innovation can diversify and support scientific innovators, who can contribute to global progress. To ride this wave of progress, we must all participate and innovate in the new era of space exploration. The intersection of space exploration, innovation and impact isn’t a new phenomenon. In the past, technology developments and spin-offs from space research have consistently found their way into communities worldwide sometimes with lifesaving benefits. The International Space Station supports experiments that have led to discoveries and inventions in communication, water purification, and remote guidance for health procedures and robotic surgeries. Satellite-enabled Earth observation capabilities that monitor natural disasters, climate and crops often support early warnings for threats and mitigation strategies. Space exploration has always been relevant to everyone no matter the discipline or interest. Commercialization of space has been key in many ways to the current boost in “firsts” over the last few years. It has spurred innovation in launch vehicles and related technologies that led to firsts in vertical-takeoff-vertical landing rocket technology, reusability of rocket boosters and privately developed crewed missions to orbit. Concurrently, NASA has continued to captivate our imagination with the first flight of a helicopter in another world, a mission to return an asteroid sample to Earth and sending a probe to make the closest ever approach to the sun. While we celebrate the scientific progress, there is a vastly important question that we all need to focus on: How can we drive the surge in innovation offered by increased access to space, to benefit humankind? Access to low-Earth orbit, and eventually human exploration of space, is a portal to achieve many impactful outcomes. The numbers and completion rate of microgravity experiments conducted by scientists will be greatly increased as a range of offerings in suborbital flights provide more opportunities to advance critical research in health, agriculture, energy, and more. Lunar, planetary, and even asteroid exploration may lead to discoveries of new materials — busting the limitations now imposed on capabilities for energy, transportation, and infrastructure or creating new sensors and devices that enhance safety on Earth. Space tourism —one can hope — has the power to potentially create an awareness of our oneness that may lead to social change.

#### Commercial space innovation stops extinction

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We find ourselves still at the dawn of a new space century, mindful of the victories and setbacks of our past, eager to pass the torch to the next generation of space visionaries, scientists, engineers, and enthusiasts. We look to the future not just to see how much bigger, faster, or higher we can reach, but also how the United States, and specifically the U.S. space community, can again inspire the nations of the world to align with us, as it did in the 20th century. The SmallSat Alliance is an alliance of companies developing, producing, and operating in all segments of the ‘next generation’ space economy; championing renewed U.S. leadership in the burgeoning commercial space economy, and advocating for the transformation of government-led space capabilities. We are experienced space professionals who have chosen to join with others leveraging our decades of hard-won experience, to develop smarter ways to explore space in the 21st century. A wonderful outgrowth of the legacy space program is the commercial, entrepreneurial, and job-creating commercial space business that it bequeathed. These next-generation enterprises range from multi-million-dollar startups providing rideshare opportunities or components for small satellites to multi-billion-dollar space data-analytic platforms reinventing urban car service and agricultural production. The early returns of this economic revolution are already on our doorstep: space data capabilities are exponentially growing elements of the 21st century world economy. Beginning with the dreams and funding by successful tech entrepreneurs, enormous venture investments are already delivering wondrous benefits to the world. Commercial Space – Profit and Non-Profit There are really two major categories in the commercial sector, the profit driven and the non-profit. The classic for-profit companies include not only those designing, building, launching, and operating satellites but also the tech sector that is turning that raw space data into gold through machine-learning analytics. Since for-profit companies are no longer dependent upon the revenues generated by the Cold War space race culture of a bygone era, this new generation of space companies is able to more efficiently capitalize on Moore’s Law, the nonstop exponential growth in chip density, and the associated networking technology co-evolving with it. This new generation is building profitable businesses helping to clean up our oceans of garbage and debris with satellite surveillance, reconnoitering to assist in enforcing laws that protect our oceans from illegal, unregulated, unlicensed fishing, something that is rapidly depleting the world’s most valuable and essential lifeforms. It’s leading in the innovative use of low-cost satellite constellations to produce ubiquitous remote-sensing data, enabling small business owners to be more profitable and less wasteful. For example, precise timing signals from space are already optimizing transportation of people, goods, and services, with even further gains anticipated with the introduction of artificial intelligence to assist drivers, perhaps even someday replacing them entirely. The non-profit sector is the other side of commercial space, concerned more for the general welfare of society, but every bit as integral to this new space enterprise. Much like every century before it in human history, ours is not without its unique challenges, some of which have been a consequence of the last, and all of which the space data domain can be leveraged to help solve. Examples are endless, but one challenge that this new space community is uniquely well-adapted for is to further inform worldwide resource allocation for the 21st century and beyond. These two primary resources are sustainable water and the materials needed for adequate housing for an ever-increasing human population. As cities and urbanization continue to expand, governmental planning challenges such as transportation design optimization for goods and services are only the beginning. Additionally, through using inexpensive remote sensing technologies, some members are designing space data analytics to mitigate human suffering from plagues, contain outbreaks, and combating illegal poaching. Some are connecting with other non-profits to curtail human trafficking for the sex trade or forced labor for migrant debt repayment. Still others are helping non-governmental organizations in their work to expose the use of children as soldiers. Addressing these challenges has little to do with resuscitating dreams conceived by long deceased science-fiction writers and much more to do with turning “swords back into plowshares” to solve real threats to humanity. Other non-profit initiatives include pursuing an even more foundational understanding of who we are and how to be the best custodians of our environment. Much as exploring and monitoring the world’s oceans has advanced civilization through a better understanding of human life and the planet, so too does exploring and monitoring from space. Low Earth orbit (LEO) provides a unique vantage point to look back on the planet and understand what is happening, anticipate what might happen and prepare for the future. In addition to better understanding Earth, responsible and rapid exploitation of the low Earth orbit domain will enhance the understanding of the solar system and the rest of the universe. Small satellites already offer low-cost platforms to study and explore what lies beyond the Earth. Other members are pioneering the use of zero-carbon, hydrogen-based reusable propulsion systems to ensure we don’t worsen our atmosphere using kerosene-fueled rockets for the coming tsunami of satellite launches. Finally, a mission ensuring the general welfare and planet survival for the next thousand years is finally confronting the existential threat that asteroids and comets pose to humanity. These extra-terrestrial, deep-space threats are passing dangerously close to our planet, and today we have no solar map of them and no defense.

### Off 2

#### The aff forces public space initiatives that trades off other projects like earth science

Jones 19—(Research Analyst, Strategy & Insights at Brandwatch and Writer for Court House News). Alexandra Jones. 19, 5-30-2019. "Watchdog Finds NASA Projects Costly and Behind Schedule". <https://www.courthousenews.com/watchdog-finds-nasa-projects-costly-and-behind-schedule/>

A government watchdog group reported Thursday that NASA’s major space projects are over budget and falling behind schedule. The report from the U.S. Government Accountability Office found that, NASA’s top undertakings are exceeding their baseline costs by more than 27% and launches are being delayed on average by 13 months, the longest scheduling setback seen in the decade the watchdog has been assessing the projects. “NASA hasn’t been able to meet its cost and schedule goals on some of its costliest programs, like the James Webb Space Telescope and human spaceflight efforts,” according to a summary of the report. “Now these programs are staying in the portfolio longer than planned as NASA is starting new efforts, such as going back to the Moon.” This will place a strain on NASA’s budget going forward, the GAO said. “NASA will have to either increase its annual funding request or make tradeoffs between projects,” the report summary states. A predecessor to the Hubble Space Telescope, the James Webb Space Telescope project is costing NASA an estimated $9.6 billion, according to the GAO. First predicted to launch in 2007, its initial estimates were as low as $1 billion. The amount of required funds for NASA’s Space Launch System have also increased and senior NASA officials told the GAO that “it is unlikely these programs will meet the launch date of June 2020” – a date that has already been pushed back by 19 months. But the trend is nothing new for NASA. In its annual report released last year, the GAO found that nine out of 17 NASA projects were requiring more money and time than initially anticipated.

#### NASA earth science key to prevent climate change---extinction

Lori Garver 19, chief executive at Earthrise Alliance and was deputy NASA administrator from 2009 to 2013, “Forget new crewed missions in space. NASA should focus on saving Earth.”, https://www.washingtonpost.com/opinions/forget-new-manned-missions-in-space-nasa-should-focus-on-saving-earth/2019/07/18/79e55eb8-a995-11e9-9214-246e594de5d5\_story.html

NASA was not created to do something again. It was created to push the limits of human understanding — to help the nation solve big, impossible problems that require advances in science and technology. Fifty years ago, the impossible problem was putting a human on the moon to win the space race, and all of humanity has benefited from the accomplishment. The impossible problem today is not the moon. And it’s not Mars. It’s our home planet, and NASA can once again be of service for the betterment of all. Let’s remember our history. We went to the moon 50 years ago in response to the Soviet Union’s perceived domination of spaceflight. The 12 Americans who walked on the moon brought back 842 pounds of lunar material (rocks and dust), learned about our closest planetary body’s geology and gave us a view of the Earth that changed our perspective. But that’s not what drove NASA spending to 4 percent of the federal budget in 1965. We were willing to stake so much on the moon landing — only because there was so much at stake. After accomplishing this amazing feat, the aerospace community has again and again sought presidential proclamations to go further. President Trump is the fifth president to proclaim we will send humans to the moon and/or Mars within a specific time frame, a decree without a value proposition that has never inspired broad public support nor come close to coming true. NASA remains one the most revered and valuable brands in the world, and the agency is at its best when given a purpose. But the public doesn’t understand the purpose of spending massive amounts of money to send a few astronauts to the moon or Mars. Are we in another race, and if so, is this the most valuable display of our scientific and technological leadership? If science is the rationale, we can send robots for pennies on the dollar. In a July Pew Research Center study, 63 percent of respondents said monitoring key parts of Earth’s climate system should be the highest priority for the United States’ space agency — sending astronauts to the moon was their lowest priority, at 13 percent ; 18 percent favor Mars. The public is right about this. Climate change — not Russia, much less China — is today’s existential threat. Data from NASA satellites show that future generations here on Earth will suffer from food and water shortages, increased disease and conflict over diminished resources. In 2018, the National Academy of Sciences released its decadal survey for Earth science and declared that NASA should prioritize the study of the global hydrological cycle; distribution and movement of mass between oceans, ice sheets, ground water and atmosphere; and changes in surface biology and geology. Immediately developing these sensors and satellites while extending existing missions would increase the cadence of new, more precise measurements and contribute to critical, higher-fidelity climate models. NASA could also move beyond measurement and into action — focusing on solutions for communities at the front lines of drought, flooding and heat extremes. It could develop and disseminate standardized applications that provide actionable information to populations that are the most vulnerable. NASA could create a Climate Corps — modeled after the Peace Corps — in which scientists and engineers spend two years in local communities understanding the unique challenges they face, training local populations and connecting them with the data and science needed to support smart, local decision-making.

### Off 3

#### Current business sentiment promises a slow and steady recovery.

Dr. Mark Zandi 11/15, PhD from UPenn, economist, and director of economic research at Moody’s Analytics, 11/15/21, “Moody's Analytics Survey of Business Confidence,” <https://www.economy.com/economicview/indicator/usa_dsbc/5C438EAA-8AA1-484E-8931-62208FCACE22>, cc

Abstracting from the weekly ups and downs of responses to the global business survey, business sentiment remains stuck consistent with a slowly recovering global economy. Most encouraging, more than one-third of respondents to the survey say present business conditions are improving and more than half say their sales are strengthening. Hiring and investment intentions aren’t as strong, but they are much improved since the dark days of the pandemic. Demand for office space remains depressed, inventory accumulation is weak, and though financial conditions are good, they aren’t as good as they were prior to the pandemic.

#### **Consistent space regulations are key to business confidence**

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Like most areas of economic activity, space resource utilisation business plans are based upon the ability to access a resource, produce a product, service, or goods based from the resource, and produce revenue from that product based on established market activities. An economic system requires a level of regulation and oversight to ensure it functions. Regulation and governmental oversight is part of an overall market framework that provides stability and confidence in validity for commercial entities and those that invest in them. Just as the commercial companies are in the initial stages of developing and validating hardware, governments have begun to establish regulatory and policy frameworks.

#### Business confidence is tied to economic growth

Sarah Chaney Cambon 21, Reporter on The Wall Street Journal's Economics Team, BA in Business Journalism from the University of North Carolina-Chapel Hill, “Capital-Spending Surge Further Lifts Economic Recovery”, Wall Street Journal, 6/27/2021, https://www.wsj.com/articles/capital-spending-surge-further-lifts-economic-recovery-11624798800

Business investment is emerging as a powerful source of U.S. economic growth that will likely help sustain the recovery.

Companies are ramping up orders for computers, machinery and software as they grow more confident in the outlook.

Nonresidential fixed investment, a proxy for business spending, rose at a seasonally adjusted annual rate of 11.7% in the first quarter, led by growth in software and tech-equipment spending, according to the Commerce Department. Business investment also logged double-digit gains in the third and fourth quarters last year after falling during pandemic-related shutdowns. It is now higher than its pre-pandemic peak.

Orders for nondefense capital goods excluding aircraft, another measure for business investment, are near the highest levels for records tracing back to the 1990s, separate Commerce Department figures show.

“Business investment has really been an important engine powering the U.S. economic recovery,” said Robert Rosener, senior U.S. economist at Morgan Stanley. “In our outlook for the economy, it’s certainly one of the bright spots.”

Consumer spending, which accounts for about two-thirds of economic output, is driving the early stages of the recovery. Americans, flush with savings and government stimulus checks, are spending more on goods and services, which they shunned for much of the pandemic.

Robust capital investment will be key to ensuring that the recovery maintains strength after the spending boost from fiscal stimulus and business reopenings eventually fades, according to some economists.

Rising business investment helps fuel economic output. It also lifts worker productivity, or output per hour. That metric grew at a sluggish pace throughout the last economic expansion but is now showing signs of resurgence.

The recovery in business investment is shaping up to be much stronger than in the years following the 2007-09 recession. “The events especially in late ’08, early ’09 put a lot of businesses really close to the edge,” said Phil Suttle, founder of Suttle Economics. “I think a lot of them said, ‘We’ve just got to be really cautious for a long while.’”

Businesses appear to be less risk-averse now, he said.

After the financial crisis, businesses grew by adding workers, rather than investing in capital. Hiring was more attractive than capital spending because labor was abundant and relatively cheap. Now the supply of workers is tight. Companies are raising pay to lure employees. As a result, many firms have more incentive to grow by investing in capital.

Economists at Morgan Stanley predict that U.S. capital spending will rise to 116% of prerecession levels after three years. By comparison, investment took 10 years to reach those levels once the 2007-09 recession hit.

Company executives are increasingly confident in the economy’s trajectory. The Business Roundtable’s economic-outlook index—a composite of large companies’ plans for hiring and spending, as well as sales projections—increased by nine points in the second quarter to 116, just below 2018’s record high, according to a survey conducted between May 25 and June 9. In the second quarter, the share of companies planning to boost capital investment increased to 59% from 57% in the first.

“We’re seeing really strong reopening demand, and a lot of times capital investment follows that,” said Joe Song, senior U.S. economist at BofA Securities.

Mr. Song added that less uncertainty regarding trade tensions between the U.S. and China should further underpin business confidence and investment. “At the very least, businesses will understand the strategy that the Biden administration is trying to follow and will be able to plan around that,” he said.

#### Decline cascades---nuclear war

Dr. Mathew Maavak 21, PhD in Risk Foresight from the Universiti Teknologi Malaysia, External Researcher (PLATBIDAFO) at the Kazimieras Simonavicius University, Expert and Regular Commentator on Risk-Related Geostrategic Issues at the Russian International Affairs Council, “Horizon 2030: Will Emerging Risks Unravel Our Global Systems?”, Salus Journal – The Australian Journal for Law Enforcement, Security and Intelligence Professionals, Volume 9, Number 1, p. 2-8

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.

# Case

## Debris

### Defense

**No risk of accidents – tech solves AND space isn’t crowded.**

**Fernholz ’19** [Tim, "SpaceX’s new satellites will dodge collisions autonomously (and they’d better)," May 24, https://qz.com/1627570/how-autonomous-are-spacexs-starlink-satellites]

“Within a year and a half, maybe two years, if things go well, SpaceX will probably have more satellites in orbit than all other satellites combined,” Elon Musk said last week. This is an exaggeration. There are almost 2,000 operational satellites in space right now. But Thursday night’s launch of 60 satellites for a new internet network called Starlink is the first step towards that goal. Today, Musk’s space company said it expects to launch six more times in 2019, with the goal of operating 720 satellites by the end of the 2020, and eventually more than 4,000. The Federal Communications Commission—the lead regulator for American satellites—approved these satellite, among 13,000 new satellites okayed in the last year. That huge number has many in the space community nervous about the potential for collisions with other satellites or with space debris. Neither the United States nor the world has a reliable system for managing traffic in space, and policymakers are struggling to keep up with the private sector’s growing ability to hurl computers into the cosmos at faster and faster rates. Musk said the satellites his company launches will avoid potential collisions on their own. And Mark Juncosa, the SpaceX executive in charge of developing the Starlink satellites, downplayed concerns when answering press inquiries on the matter last week. “It might be worth mentioning for people that are not in the space industry … space is really big,” he said. It was experts focused on pinning down what’s going on in orbit who questioned whether the autonomous systems would have sufficient data to safely maneuver. Musk’s electric cars at Tesla often face similar questions. However advanced their AI, what’s more important is how well the car can see. The ultimate source for space situational awareness is the US Air Force’s Combined Space Operations Center, or CSpOC, which tracks orbital objects 10 centimeters in diameter or larger with a worldwide radar network. Most satellite companies, especially those with large fleets, automate the communications and “station keeping” maneuvers. But when they receive a warning from CSpOC that there is a risk of collision with another spacecraft or with space debris, their team consults with the Air Force to make a decision about how to move. Planet, which operates more than 150 spacecraft, automates its communications with CSpOC and has software that calculates the probability of potential conjunctions when they receive a warning. But, when the probability of conjunction reaches about 1 in 10,000, their flight operations team steps in to plan a maneuver to keep their satellites out of trouble. SpaceX says there will be no human in the loop when it comes to its satellites. When notified of a potential conjunction with another object in space, their software will decide whether and how to maneuver, and communicate that information back to CSpOC. It’s not clear what their threshold will be for taking action, or how much warning they will give to the US Air Force. CSpOC did not respond to questions about this communications system. Satellite experts are happy to see efforts at automation, because conjunction reports are only going to increase as more satellites fly. But they worry about an automated system responding to imperfect data, and emphasize the need for the widest possible transparency. Though orbital mechanics are extremely predictable, space sensing is imperfect and the margin of error around where exactly a satellite can be is quite large. Many spacecraft operators join the Space Data Association, a trade association for exchanging space traffic data, and others partner with new space surveillance companies like LeoLabs to obtain more data about what’s happening in orbit. “Because we look at many hundreds of satellites every single day, we find that there are issues with the data,” Dr. T.S. Kelso, a former Air Force officer who works for the Space Data Association, told Quartz. His operation generates about 2,000 conjunction reports every four days. “We can go from something that looks very serious one day to all of the sudden there is nothing in the data. … if you are maneuvering because it is a 1 in 10,000 chance, if you had done nothing, you still had a pretty good chance nothing was going to happen.” SpaceX isn’t responsible for the lack of a real space traffic management system, but as a first mover among companies preparing ambitious satellite networks that far outstrip anything that came before, it is likely to set the tone for how operators and regulators interact. The company chose to fly the satellites at a low enough altitude that if they fail, they will safely burn up in the atmosphere within a year, rather than remaining space junk. “The space junk thing, we don’t want to trivialize it or not take it seriously,” Musk said. “[But] it’s not crowded up there. It’s extremely sparse. If your goal was to hit something, it wouldn’t be easy.”

#### Collision is unlikely – all countries receive collision warnings THREE days ahead AND their evidence doesn’t assume new technology.

**Mosher** **’19** [Dave; September 3rd; Journalist with more than a decade of experience reporting and writing stories about space, science, and technology; Business Insider, “Satellite collisions may trigger a space-junk disaster that could end human access to orbit. Here’s How,” <https://www.usafa.edu/app/uploads/Space_and_Defense_2_3.pdf>; GR]

The Kessler syndrome plays center-stage in the movie "Gravity," in which an accidental space collision endangers a crew aboard a large space station. But Gossner said that type of a runaway space-junk catastrophe is unlikely. "Right now I don't think we're close to that," he said. "I'm not saying we couldn't get there, and I'm not saying we don't need to be smart and manage the problem. But I don't see it ever becoming, anytime soon, an unmanageable problem." There is no current system to remove old satellites or sweep up bits of debris in order to prevent a Kessler event. Instead, space debris is monitored from Earth, and new rules require satellites in low-Earth orbit be deorbited after 25 years so they don't wind up adding more space junk. "Our current plan is to manage the problem and not let it get that far," Gossner said. "I don't think that we're even close to needing to actively remove stuff. There's lots of research being done on that, and maybe some day that will happen, but I think that — at this point, and in my humble opinion — an unnecessary expense." A major part of the effort to prevent a Kessler event is the Space Surveillance Network (SSN). The project, led by the US military, uses 30 different systems around the world to identify, track, and share information about objects in space. Many objects are tracked day and night via a networkof radar observatories around the globe. Optical telescopes on the ground also keep an eye out, but they aren't always run by the government. "The commercial sector is actually putting up lots and lots of telescopes," Gossner said. The government pays for their debris-tracking services. Gossner said one major debris-tracking company is called Exoanalytic. It uses about 150 small telescopes set up around the globe to detect, track, and report space debris to the SSN. Telescopes in space track debris, too. Far less is known about them because they're likely top-secret military satellites. Objects detected by the government and companies get added to a catalog of space debris and checked against the orbits of other known bits of space junk. New orbits are calculated with supercomputers to see if there's a chance of any collisions. Diana McKissock, a flight lead with the US Air Force's 18th Space Control Squadron, helps track space debris for the SSN. She said the surveillance network issues warnings to NASA, satellite companies, and other groups with spacecraft, based on two levels of emergency: basic and advanced. The SSN issues a basic emergency report to the public three days ahead of a 1-in-10,000 chance of a collision. It then provides multiple updates per day until the risk of a collision passes. To qualify for such reporting, a rogue object must come within a certain distance of another object. In low-Earth orbit, that distance must be less than 1 kilometer (0.62 mile); farther out in deep space, where the precision of orbits is less reliable, the distance is less than 5 kilometers (3.1 miles). Advanced emergency reports help satellite providers see possible collisions much more than three days ahead. "In 2017, we provided data for 308,984 events, of which only 655 were emergency-reportable," McKissock told Business Insider in an email. Of those, 579 events were in low-Earth orbit (where it's relatively crowded with satellites).

#### Kessler Syndrome false – less debris and existing guidelines solve

Lewis 15 (Hugh, Senior Lecturer in Aerospace Engineering at the University of Southampton, “Space debris, Kessler Syndrome, and the unreasonable expectation of certainty.” Room, <https://room.eu.com/article/Space_debris_Kessler_Syndrome_and_the_unreasonable_expectation_of_certainty>, Accessed 8/10/19, JMoore)

There is now widespread awareness of the space debris problem amongst policymakers, scientists, engineers and the public. Thanks to pivotal work by J.C. Liou and Nicholas Johnson in 2006 we now understand that the continued growth of the debris population is likely in the future even if all launch activity is halted. The reason for this sustained growth, and for the concern of many satellite operators who are forced to act to protect their assets, are collisions that are expected to occur between objects – satellites and rocket stages – already in orbit. In spite of several commentators warning that these collisions are just the start of a collision cascade that will render access to low Earth orbit all but impossible – a process commonly referred to as the ‘Kessler Syndrome’ after the debris scientist Donald Kessler – the reality is not likely to be on the scale of these predictions or the events depicted in the film Gravity. Indeed, results presented by the Inter-Agency Space Debris Coordination Committee (IADC) at the Sixth European Conference on Space Debris show an expected increase in the debris population of only 30% after 200 years with continued launch activity. Collisions are still predicted to occur, but this is far from the catastrophic scenario feared by some. Constraining the population increase to a modest level can be achieved, the IADC suggested, through widespread and good compliance with existing space debris mitigation guidelines, especially those relating to passivation (whereby all sources of stored energy on a satellite are depleted at the end of its mission) and post-mission disposal, such as de-orbiting the satellite or re-orbiting it to a graveyard orbit. Nevertheless, the anticipated growth of the debris population in spite of these robust efforts merits the investigation of additional measures to address the debris threat, according to the IADC.

### Debris Good

#### Debris takes out our satellites.

Mark Buchanan 18, an American physicist and author. He was formerly an editor with the international journal of science Nature, and the popular science magazine New Scientist. He has been a guest columnist for the New York Times, and currently writes a monthly column for the journal Nature Physics, ThePrint, 20 September, 2018, "Junk in space is a huge threat to everything from Internet to GPS &amp; weather forecasts", https://theprint.in/opinion/junk-in-space-is-a-huge-threat-to-everything-from-internet-to-gps-weather-forecasts/121445/

Last Saturday, the National Aeronautics and Space Administration launched the Ice, Cloud and Land Elevation Satellite-2, which will monitor Earth’s ice sheets, recording changes in ice thickness as small as half a centimeter. The satellite will allow us to see one consequence of our collective pressure on the planet’s environment. And yet it will, in a small way, also exacerbate another emerging global problem.

The U.S. Air Force — more precisely, the U.S. Strategic Command — is already actively tracking more than 20,000 satellites, rocket pieces and collision fragments bigger than a softball that are orbiting the earth, which together present a looming menace to satellite operations and everything that depends on them, including global positioning systems, telecommunications, weather forecasts and the internet. Over 50 years ago, when we first started putting satellites in orbit, we seemed small, and the earth very big. Now, with nearly 500 new satellites going up every year, our influence is no longer small. Congested space is another reflection of our entry into the Anthropocene — a new era of history in which everything about the earth and its climate, even the space around it, is profoundly affected by human activity.

NASA scientists began thinking about potential space overcrowding in the early 1970s, when the number of satellites in orbit was approaching 4,000. In an influential paper, space scientists Donald Kessler and Burton Cour-Palais made a rough estimate that, as the number of satellites grew, the risk of collisions would become an issue by the 2000s. They weren’t far off. In 2009, a U.S. commercial satellite collided with an inactive Russian communications satellite at a speed of some 26,000 miles per hour, creating two clouds of debris that rapidly dispersed throughout low Earth orbits, at anywhere from 400 to 1,000 miles above the earth.

More important, Kessler and Cour-Palais also pointed to a serious risk that would arise if the number of objects in low or medium Earth orbits became too high: A higher density of objects, they argued, makes it more likely that the secondary fragments created in one collision will in turn strike other objects. A sufficient density of debris could set the stage for a fragmentary chain reaction that could quickly render the entire space around Earth unusable.

#### Satellites key to drones and PGS

Jeremy Rabkin 17, Professor of Law at George Mason University; and John Yoo, Professor of Law at the University of California-Berkeley, 2017, Striking Power: How Cyber, Robots, and Space Weapons Change the Rules of War, p. 193-194

Since the end of the Cold War, space-based military systems have come to exert a more direct terrestrial impact. The global positioning system (GPS) allows U.S. aircraft, naval vessels, and ground units to locate their whereabouts and to direct their fire with precision. The stunning speed of the initial invasion of Iraq in 2003, like the earlier triumph of the Persian Gulf War in 1991, demonstrates the lethal success of military’ operations that integrate satellite communications and information gathering. The drone campaign against terrorist leaders in the Middle East and Pakistan depends on satellites to locate targets, conduct real-time surveillance, and then control the fire systems of the drones.

The future holds even more advances in store. Building on precision-guided munitions, the U.S. Defense Department is developing a “prompt global strike” system that will use GPS satellites to guide hypersonic missiles, armed with conventional warheads, to targets anywhere in the world within an hour.1 More exotic versions envision bombardments from orbital platforms using rods, which would generate their explosive force purely from the kinetic energy created by their high terminal velocity upon reentering the atmosphere. American planners speculate that such systems could replace the need for tactical nuclear weapons because of their combination of precision, speed, and destructive potential.

#### PGS causes destabilization and conflict.

Raf Casps 18, lecturer at the University of Birmingham and a Visiting Researcher at the United Nations Institute of Disarmament Research in Geneva before joining King’s College London and the UK’s Joint Services Command and Staff College. PhD in International Relations from Cambridge University, Medium, 6-21-2018, "Conventional Prompt Global Strike: Enhancing Deterrence?", https://medium.com/raf-caps/conventional-prompt-global-strike-enhancing-deterrence-dac5a0fe6af7

Undermining stability and deterrence

While past US Administrations have viewed CPGS as enhancing deterrence, these weapons have provoked intense debate, in particular how they will impact crisis stability. One of the most significant concerns is that Russia will view such weapons as a direct threat to its Strategic Nuclear Forces. Indeed, this outlook appears in Russian doctrine, and in policy statements in various international fora. For instance, at the 2015 Nuclear Non-proliferation Treaty Review Conference, the head of the Russian delegation stated that US policy hinders further nuclear reductions through its ‘intransigent course’, undermining strategic stability by pursuing, among other things, a missile defence system and the “prompt global strike” concept.[6] This is a consistent mantra. However, some argue that Russia overstates the danger to its forces. Russia is the only state beyond the US with a warning system that is capable of detecting a missile launch. Its over-the-horizon and space-based capabilities should be easily capable of discerning the difference between an ICBM and a CPGS weapon. And while a greater proportion of its deterrent is land-based than that of the US (and clearly that of Britain or France), Russia maintains a significant second-strike capability with its SLBM force. Russia’s willingness to introduce nuclear weapons at a lower threshold than other powers is also clearly established. Therefore, a disarming strike by the US against the Russian ICBM force, or perhaps even its command and control structure, would seem highly risky, and therefore unlikely. Nonetheless, Russia’s sensitivity over their nuclear deterrent cannot be underestimated. The nuclear deterrent is seen as integral to Russia’s claim to be a great power. In addition to this, Russian policy makers are keenly aware of the inferiority of their conventional forces to the US, which acts to magnify both the symbolic and strategic value of nuclear weapons to the Kremlin. Any perceived threat, real or otherwise, will serve to create significant concerns in Moscow.

The perceived threat from these weapons is further amplified when CPGS is allied to missile defence systems. There are numerous statements by Russian and Chinese officials as to the combined effect of these conventional systems, and their capability of a disarming first strike. Such fears have driven Russia to increase its reliance on tactical nuclear weapons, and to upgrade the robustness of its nuclear systems, while also hastening aerospace defence capabilities. The reliance on tactical nuclear weapons in particular brings negative consequence in terms of security and control. They are widely held to highly destabilizing, and change the metrics of deterrence.

Further concerns are created by the ambiguities that are inherent in CPGS designs. These relate to the type of warhead, the country targeted, and the type of target. The points relating to the ambiguity of whether a weapon carried a nuclear or conventional warhead has been discussed above. The withdrawal of funding for the CTM has probably eradicated this as an uncertainty, at least as far as the US programme is concerned. Basing options and inspections would serve to eliminate the vestiges of any further doubt. However, the latter two concerns are more persistent. The ability of CPGS platforms to manoeuvre means that their destination cannot be determined until late in the flight envelope — perhaps not until the final moments. Thus a strike on a third party could be interpreted by Russia (and perhaps China in the future if it builds a missile warning system) as a strike on itself, and trigger a response. The likelihood of such a scenario is slim, but cannot be discounted entirely. Similarly, a state detecting an incoming strike (again, only Russia currently) may incorrectly assume that the strike is targeting its nuclear capabilities, rather than conventional forces. The fear would be that it would result in a serious escalation of tension, or even a nuclear retaliation. However, it is worth noting that the current costs of CPGS technologies would mean that such strikes would involve very limited number of weapons. Such numbers may not be considered sufficient for Russia to retaliate, though they might present a greater concern for China and its smaller nuclear force. Thus it is unlikely that a CPGS strike would be overwhelming. Once more, however, it may be perceptions that matter most. The cost and complexity of US CPGS systems make it hard to persuade Moscow or Beijing that they are designed for much less capable states, and there appears an assumption that ‘orthodox’ nuclear deterrence may be ineffective against conventional counterforce threats.

Thus there is concern that CPGS could have significant impact on the global nuclear order, and perhaps also nuclear proliferation. Even though the US ties these to nuclear reductions, the increased emphasis on conventional weaponry may do very little to allay security concerns in other states. In a scenario of decreased nuclear weapons numbers, conventional weapons will only increase in salience. The consequences could reduce the prospects for future nuclear reductions, and possibly increase tendencies towards proliferation.

Beyond the potential effects on escalation dynamics, questions remain as to how well these weapons would perform their mission. As CPGS rely on precision for their effect, an important consideration is exactly how precise such a weapon would be, given range and manoeuvring, particularly in environments where navigational signals are degraded or denied. Related to this, the timeliness of information is critical. How the requisite ISTAR assets can be brought to bear in non-permissive environments to provide this information, and indeed if they can, whether they wouldn’t be a more effective delivery platform themselves, are further issues that need resolving. Stealth platforms, or future armed reconnaissance Remotely Piloted Air Systems (RPAS) could be more effective in this role.[7]

**Prolif causes nuclear terrorism and war via brinksmanship and preemptive strikes.**

**Kroenig 15** (Matthew, Associate Professor and International Relations Field Chair in the Department of Government and School of Foreign Service at Georgetown University, 2015. “The History of Proliferation Optimism: Does It Have a Future?” *Journal of Strategic Studies*, Volume 38, Issue 1-2, 2015)

The spread of **nuclear weapons** poses at least six **severe threats** to international peace and security including: **nuclear war**, **nuclear terrorism**, global and regional instability, constrained US freedom of action, **weakened alliances**, and further nuclear proliferation. Each of these threats has received extensive treatment elsewhere and this review is not intended to replicate or even necessarily to improve upon these previous efforts. Rather the goals of this section are more modest: to usefully bring together and recap the many reasons why we should be pessimistic about the likely consequences of nuclear proliferation. Many of these threats will be illuminated with a discussion of a case of much contemporary concern: Iran’s advanced nuclear program. Nuclear War The greatest threat posed by the spread of nuclear weapons is nuclear war. The **more states** in possession of nuclear weapons, the **greater the probability** that somewhere, someday, there will be a **catastrophic nuclear** war. To date, nuclear weapons have only been used in warfare once. In 1945, the United States used nuclear weapons on Hiroshima and Nagasaki, bringing World War II to a close. Many analysts point to the 65-plus-year tradition of nuclear non-use as evidence that nuclear weapons are unusable, but it would be naïve to think that nuclear weapons will never be used again simply because they have not been used for some time. After all, analysts in the 1990s argued that worldwide economic downturns like the Great Depression were a thing of the past, only to be surprised by the dot-com bubble bursting later in the decade and the Great Recession of the late 2000s.48 This author, for one, would be surprised if nuclear weapons are not used again sometime in his lifetime. Before reaching a state of **MAD**, new nuclear states go through a **transition** period in which they **lack** a secure-**second strike** capability. In this context, one or both states might believe that it has an **incentive** to **use** nuclear weapons **first**. For example, if Iran acquires nuclear weapons, neither Iran, nor its nuclear-armed rival, Israel, will have a secure, second-strike capability. Even though it is believed to have a large arsenal, given its small size and lack of strategic depth, Israel might not be confident that it could absorb a nuclear strike and respond with a devastating counterstrike. Similarly, Iran might eventually be able to build a large and survivable nuclear arsenal, but, when it first crosses the nuclear threshold, Tehran will have a small and vulnerable nuclear force. In these pre-MAD situations, there are at least three ways that nuclear war could occur. First, the state with the nuclear advantage might believe it has a splendid first strike capability. In a crisis, Israel might, therefore, decide to launch a **preventive nuclear strike** to disarm Iran’s nuclear capabilities. Indeed, this **incentive** might be further increased by Israel’s aggressive strategic culture that emphasizes **preemptive action**. Second, the state with a small and vulnerable nuclear arsenal, in this case Iran, might feel **use them or lose them pressures**. That is, in a crisis, Iran might decide to strike first rather than risk having its entire nuclear arsenal destroyed. Third, as Thomas Schelling has argued, nuclear war could result due to the reciprocal fear of surprise attack.49 If there are advantages to striking first, one state might start a nuclear war in the belief that war is inevitable and that it would be better to go first than to go second. Fortunately, there is no historic evidence of this dynamic occurring in a nuclear context, but it is still possible. In an Israeli–Iranian crisis, for example, Israel and Iran might both prefer to avoid a nuclear war, but decide to strike first rather than suffer a devastating first attack from an opponent. Even in a world of MAD, however, when both sides have secure, second-strike capabilities, **there is still a risk of nuclear war**. Rational deterrence theory assumes nuclear-armed states are governed by rational leaders who would not intentionally launch a suicidal nuclear war. This assumption appears to have applied to past and current nuclear powers, but there is no guarantee that it will continue to hold in the future. Iran’s theocratic government, despite its inflammatory rhetoric, has followed a fairly pragmatic foreign policy since 1979, but it contains leaders who hold millenarian religious worldviews and could one day ascend to power. We cannot rule out the possibility that, as nuclear weapons continue to spread, some leader somewhere will choose to launch a nuclear war, knowing full well that it could result in self-destruction. One does not need to resort to irrationality, however, to imagine nuclear war under MAD. Nuclear weapons may deter leaders from intentionally launching full-scale wars, but they do not mean the end of international politics. As was discussed above, nuclear-armed states still have conflicts of interest and leaders still seek to coerce nuclear-armed adversaries. Leaders might, therefore, choose to launch a limited nuclear war.50 This strategy might be especially attractive to states in a position of conventional inferiority that might have an incentive to escalate a crisis quickly to the nuclear level. During the Cold War, the United States planned to use nuclear weapons first to stop a Soviet invasion of Western Europe given NATO’s conventional inferiority.51 As Russia’s conventional power has deteriorated since the end of the Cold War, Moscow has come to rely more heavily on nuclear weapons in its military doctrine. Indeed, Russian strategy calls for the use of nuclear weapons early in a conflict (something that most Western strategists would consider to be escalatory) as a way to de-escalate a crisis. Similarly, Pakistan’s military plans for nuclear use in the event of an invasion from conventionally stronger India. And finally, Chinese generals openly talk about the possibility of nuclear use against a US superpower in a possible East Asia contingency. Second, as was also discussed above, leaders can make a ‘threat that leaves something to chance’.52 **They can initiate a nuclear crisis**. By playing these risky games of nuclear **brinkmanship**, states can **increase the risk of nuclear war** in an attempt **to force a less resolved adversary** to **back down.** Historical crises have not resulted in nuclear war, but many of them, including the 1962 Cuban Missile Crisis, have **come close**. And scholars have documented historical incidents when accidents nearly led to war.53 When we think about future nuclear crisis dyads, such as Iran and Israel, with fewer sources of stability than existed during the Cold War, we can see that there is a real risk that **a future crisis could result in a devastating nuclear exchange**. Nuclear Terrorism The spread of nuclear weapons also **increases the risk of nuclear terrorism**.54 While September 11th was one of the greatest tragedies in American history, it would have been much worse had Osama Bin Laden possessed nuclear weapons. Bin Laden declared it a ‘religious duty’ for Al- Qa’eda to acquire nuclear weapons and radical clerics have issued fatwas declaring it permissible to use nuclear weapons in Jihad against the West.55 Unlike states, which can be more easily deterred, there is little doubt that if terrorists acquired nuclear weapons, they would use them.56 Indeed, in recent years, many US politicians and security analysts have argued that nuclear terrorism poses the greatest threat to US national security.57 **Analysts** have pointed out the tremendous **hurdles** that terrorists would have to overcome in order to acquire nuclear weapons.58 Nevertheless, as nuclear weapons spread, the possibility that they will **eventually fall into terrorist hands increases**. States could intentionally **transfer nuclear weapons**, or the fissile material required to build them, to terrorist groups. There are good reasons why a state might be reluctant to transfer nuclear weapons to terrorists, but, as nuclear **weapons spread**, the probability that a leader might someday **purposely arm a terrorist group increases**. Some fear, for example, that Iran, with its close ties to Hamas and Hizballah, might be at a heightened risk of transferring nuclear weapons to terrorists. Moreover, even if no state would ever intentionally transfer nuclear capabilities to terrorists, a **new nuclear state**, with **underdeveloped security** procedures, might be vulnerable to **theft**, allowing terrorist groups or corrupt or ideologically-motivated insiders to transfer dangerous material to terrorists. There is evidence, for example, that representatives from Pakistan’s atomic energy establishment met with Al-Qa’eda members to discuss a possible nuclear deal.59 Finally, a nuclear-armed state could collapse, resulting in a breakdown of law and order and a loose nukes problem. US officials are currently very concerned about what would happen to Pakistan’s nuclear weapons if the government were to fall. As nuclear weapons spread, this problem is only further amplified. Iran is a country with a history of revolutions and a government with a tenuous hold on power. The regime change that Washington has long dreamed about in Tehran could actually become a nightmare if a nuclear-armed Iran suffered a breakdown in authority, forcing us to worry about the fate of Iran’s nuclear arsenal. **Regional Instability** The spread of nuclear weapons also **emboldens nuclear powers**, contributing to **regional instability**. States that lack nuclear weapons need to fear direct military attack from other states, but states with **nuclear weapons** can be confident that they can deter an intentional military attack, giving them an incentive to be more aggressive in the conduct of their foreign policy. In this way, nuclear weapons provide a shield under which states can feel free to engage in **lower-level aggression**. Indeed, international relations theories about the ‘stability-instability paradox’ maintain that stability at the nuclear level contributes to conventional instability.60 **Historically**, we have seen that the **spread of nuclear weapons** has emboldened their possessors and contributed to **regional instability**. Recent scholarly analyses have demonstrated that, after controlling for other relevant factors, nuclear-weapon states are more likely to engage in conflict than nonnuclear-weapon states and that this aggressiveness is more pronounced in new nuclear states that have less experience with nuclear diplomacy.61 Similarly, research on internal decision-making in Pakistan reveals that Pakistani foreign policymakers may have been emboldened by the acquisition of nuclear weapons, which encouraged them to initiate militarized disputes against India.62 Currently, Iran restrains its foreign policy because it fears major military retaliation from the United States or Israel, but with nuclear weapons it could feel free to push harder. A nuclear-armed Iran would likely step up support to terrorist and proxy groups and engage in more aggressive coercive diplomacy. With a nuclear-armed Iran increasingly throwing its weight around in the region, **we could witness an even more crisis prone Middle East.** And in a poly-nuclear Middle East with Israel, Iran, and, in the future, possibly other states, armed with nuclear weapons, **any** one of those **crises** could result in a **catastrophic nuclear exchange**.

## Cap

#### Advantage 2 is an amalgamation of buzzwords that they don’t solve. “Replacing the logic of imperialism” doesn’t have an impact and they can’t prevent Musk or Besos doing that at home.

#### The first Spencer card makes the incorrect assumption that governments care any more than private actors - if they are correct about their neoliberalism thesis, governments will be as bad, if not worse.

#### The warrant for the second Spencer card is finite resources - that’s wrong. No impact to authoritarianism read means that you should ignore the evidence even if it seems bad. The warrant is threatening to cut off oxygen which is nonsense thought up by a senior editor at Salon.

**Capitalism is key to getting us off the rock.**

Alex **Knapp 20**, writer at Forbes, 5/25/2020, "Elon Musk’s First Astronaut Launch Is One Giant Leap For Space Capitalism," https://www.forbes.com/sites/alexknapp/2020/05/25/elon-musks-first-astronaut-launch-is-one-giant-leap-for-space-capitalism/?sh=408fad182b49, Marsh

Even more significant: It’s the first time ever that astronauts will travel to orbit on a **privately-owned** spacecraft (previous space-tourism stunts have been either decidedly sub-orbital or provided by the Russian government). Behnken and Hurley will be hitching a ride on a Dragon capsule, launched by a Falcon 9 rocket, both designed and manufactured by Elon Musk-founded SpaceX. The pair will even be conveyed to the launch pad on Tesla-manufactured electric cars.

It’s a triumphant moment for Musk and his Hawthrone, California-based company. But this isn’t just a victory for one billionaire and one company. It’s a culmination of a **decades-long** effort to **transform** space into a new **frontier** of **entrepreneurship**.

“This is the same excitement I felt as a kid during the Apollo moon landings,” says Tom Zelibor, retired admiral and CEO of the Space Foundation, a nonprofit that advocates space exploration. “It’s **inspiring opportunities** for people who may not have thought of it before.”

During the Apollo program, putting Neil Armstrong on the Moon wasn’t just about technology or science. It was about the triumph of capitalism over communism. Or so the rhetoric went. Reality was different. Yes, the Apollo program was built by hundreds of private companies. But its development and direction was centralized by the federal government which spent an estimated $152 billion in today’s terms to put a man on the moon. Space would be the exclusive domain of big government through the space shuttle program in the 1980s.

This was galling to many space enthusiasts, whose passion was nurtured on science fiction stories by the likes of Robert Heinlein, who portrayed a future in space driven by capitalists. When the Cold War finally ended in 1991, entrepreneurial opportunities in the final frontier did finally begin to open up — ironically, within the former Soviet Union.

“It was the Russians that took the first steps in commercial services in space,” says Jeffrey Manber, a long-time space entrepreneur and CEO of Nanoracks. “Because of their economic collapse, they made a decision that their world-class markets — whether it was airplanes with Aeroflot, or the Bolshoi Ballet or space — had to stand on their own.”

Manber served in the Reagan Administration in the 1980s, where he’d helped to establish the Office of Space Commerce. In that role, he helped to secure the first commercial contract between the Soviet space agency and a U.S. company. His work in Russia continued after the Soviet Union fell, first by working with Russian space company Energia beginning in 1992.

The emergence of Russian space companies, which were building durable rockets at reasonable price tags, helped energize the marketplace. European and American firms, coddled by the military-industrial complex, pushed back by lobbying their governments to limit the number of Russian launches. A 1993 article of Forbes describing this response to the nascent Russian rocket industry wryly commented, “Isn’t competition good? Not to cartel members it isn’t.”

In 2000, Manber became the first CEO of MirCorp, a Netherlands-based company that took over operations of the Russian space station Mir. Though its tenure was short (the space station was de-orbited by the Russian government in March 2001), it still notched several firsts: the first privately funded cargo resupply, the first privately-funded crewed mission and the first space tourism contract.

Meanwhile, the U.S. saw a mini-boom of space entrepreneurs founding rocket companies. These efforts, however, frequently met with resistance from policymakers and legacy industry. Most ended in failure. “There were a lot of political and cultural barriers” to accepting space entrepreneurship in the United States at that time, says Manber.

One notable example of these efforts came from banker and billionaire Andrew Beal, who founded an aerospace company in 1996 with an aim to produce low-cost, reusable rockets. “It’s a big roll of the dice,” he told Forbes in April 2000. He was right. The luck ran out six months later when Beal shut down the company, citing the impossibility of competing with the government-subsidized aerospace industry.

Musk unveiled a combination of showmanship and execution reminiscent of Howard Hughes. In late 2003, for example, Musk “unveiled” his company’s early Falcon 1 rocket by shipping one across the country by truck, where it was parked in front of the Smithsonian Air and Space Museum. But that was after he’d already successfully tested its engines.

Another milestone for the industry was achieved in 2004 when SpaceShipOne, a spacecraft created by pioneering aerospace engineer Burt Rutan and his company Scaled Composites made two successful suborbital flights. That allowed Rutan to claim the $10 million Ansari XPRIZE, an incentive offered to spur development of private space vehicles. The technology was subsequently licensed by Sir Richard Branson for Virgin Galactic, which aims to fly tourists into space later this year.

Enthusiasm for private space efforts began to bubble up even in Washington D.C. In 2004, Congress passed legislation that helped clear a regulatory path for commercial launch companies. Shelli Brunswick, COO of the Space Foundation, which advocates for space exploration, credits this as a key foundation for SpaceX’s orbital launch this week. “It’s built on the right legislation, the right funding, the right policies over the last 20 years,” she says.

By 2005, NASA started changing the way it did business with the advent of its Commercial Orbital Transportation Services program. Championed by-then NASA Administrator Mike Griffin, this changed the way the agency did business. Rather than taking the lead on engineering and design, the space agency instead simply identified transportation capabilities and invited companies to offer bids on meeting them.

Since 2009, over $30 billion has been invested in over 530 separate space companies.

SpaceX seized the opportunity, winning a contract with NASA in 2006 that provided it with $278 million to develop its Falcon 9 rocket, which successfully launched for the first time in 2010. It signed a separate $1.6 billion contract with the space agency in 2008 to send cargo to the International Space Station, which it began fulfilling in 2012 when its Dragon capsule became the first private spacecraft to dock with the station.

One reason for this success, says Space Angels’ Anderson, is that legacy spacecraft companies didn’t pay much attention to the opportunity. “The big defense contractors didn’t think it was worth their time because the amounts were so small,” he says. “But for SpaceX, a young up and coming, venture-backed company, it was a big amount of money.”

he cultural shift sparked by NASA’s commercial cargo program helped lower other barriers for space entrepreneurs. Jeffrey Manber, for example, returned to the scene with a new company, Nanoracks, which in 2010 installed a research platform on the International Space Station, enabling customers to run experiments in space. In 2014, it installed a deployment system on the station that could be used to put small satellites into orbit.

As the decade moved on, SpaceX began offering launch services to other commercial customers such as telecommunications companies, at drastically lower prices than its competition (including the Russian rocket firms). Between SpaceX and Nanoracks, the cost to space quickly became drastically lower, opening new business opportunities.

“The private sector is now a full partner in opening the frontier of space.”

Jeffrey Manber, CEO of Nanoracks

One beneficiary of these opportunities was Planet, which deployed its first constellation of small satellites to take images of the Earth’s surface for things like oil and gas exploration in 2014. The satellites were launched to the ISS on a rocket under a NASA commercial cargo contract and propelled to orbit from Nanoracks deployment system. The San Francisco-based company now boasts a valuation of over $2.2 billion, according to Pitchbook.

Spurred on this success and others like it, investors have begun to **flock** to the commercial space sector. According to a report from Space Angels, since 2009 over **$30 billion** has been invested in over **530** separate space companies. There are several venture-backed space unicorns, including Planet, SpaceX and L.A.-based rocket manufacturer Rocket Lab.

Success with cargo convinced NASA to embrace a market-driven approach to returning human spaceflight to American soil. “The commercial **space sector** had really gained excellence in **commercial** and **technical** capability,” says Phil McAlister, NASA’s director of commercial spaceflight.

In 2014, NASA awarded contracts for crewed commercial space flights to two companies: Boeing, the aerospace stalwart that’s been working with NASA since the 1960s - and SpaceX. Combined, the two contracts are worth up to about $6.8 billion. “It was a huge shift in accountability and responsibility to the private sector, which is geared towards speed and cost-effectiveness. These are things that NASA is conscious of, but it’s not really in our core competencies,” McAlister chuckles.

This doesn’t mean that NASA is totally hands off in the development of either company’s spacecraft, McAlister says. But he sees it as a collaboration that combines the best of government expertise with that of the private sector. He acknowledges it hasn’t always been easy.

“This was a huge **culture change** for us to step back and say we’re going to give some of this control to the private sector,” he says. “And that was very, very difficult for NASA because we felt like we were the experts in this. I think that was the biggest challenge early on.”

For Jeffrey Manber, SpaceX sending astronauts to space “is the **exclamation point**” on the past few decades of **entrepreneurship**. “That’s what this mission is really going to **bring home** to the American public and the world,” he says. “That the **private sector** is now a full partner in **opening** the **frontier** of space.”

#### Space colonization solves extinction.

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The main benefit that could be provided by colonisation of Mars would be an opportunity to save the life of humanity when it is life on Earth will be endangered. It seems that the greatest possible source of dangers is the humanity itself, but beside it, the another greatest danger is probably the asteroid impact. To provide survival of humanity, the easier and the less costly project, as Impey points out, can be an attempt to reduce threats on Earth, and taking more care for proper conditions for human survival on Earth [12]. If we treat the idea of Mars colonisation as an alternative for an opportunity of survival of humanity, the mentioned running out resources are only one of possible threats for maintaining life on Earth. If we take into account such possible threats, it is worth considering Mars as perhaps the unique solution for further survival of humanity. Among possible threats on Earth we can enumerate such of them like nuclear war, environmental catastrophes, incurable epidemic, asteroid impact, or uncontrolled development of artificial intelligence that could be deleterious for humanity [12]. Of course, the concept of the human outer space colony as a way to solve human life could be applied probably only to some small part of the entire humanity, for instance, for these ones who survived one of the mentioned catastrophes. Consequently, the current work on preparation of the manned mission to Mars can be treated as a work to provide the future further living of the human species whose further existence on Earth in the next several hundred or several thousand years can be really endangered.

#### Space colonization grants access to an infinite amount of groundbreaking resources

**Grove 21** (Nicole Sunday Grove, 1-22-2021, "‘Welcome to Mars’: space colonization, anticipatory authoritarianism, and the labour of hope," Taylor & Francis, <https://www.tandfonline.com/doi/full/10.1080/14747731.2020.185976>, //calb)

As a term of industry in architecture, communications, engineering and construction, the concept of ‘future-proofing’ refers to processes of anticipating, insulating, and where possible, taking advan- tage of ‘shocks and stresses’ caused by future events (Rich, 2014). In order to understand the trans- lation of ‘future-proofing’ in the UAE, we should consider how the reconfiguration of sociality and urban life, as well as efforts toward economic diversification in the areas of tourism, finance, secur- ity, and now space technology are shaped by strong associations with dependence upon consumer oil revenues. Thus the notion of ‘future-proofing’ society is often framed amid concerns over declining oil prices, and more recently taken up in references to data being ‘the new oil’ in broad contexts across the country. The globalization of this wildcat ethos rests, in part, on a kind of frontier abstractionism, where fantasies of intrepid exploration and the releasing of trapped assets pair with the understanding that users sit on a vast substratum of personal information that can be extracted to generate profit, social change writ large, as well as provide intelligence for pre- dictive security and military applications (see Grove, forthcoming; Martinez, 2019). Mars is similarly positioned as a ubiquitously malleable resource with ‘untapped’ potential, one that has emerged at a time when the fascination with a particular type of extreme growth associated with Dubai has given way to broader global trends in ‘sustainable’ development. In 2017, the UAE’s National Committee on Sustainable Development Goals published a report titled ‘UAE and the 2030 Agenda for Sustainable Development: Excellence in Implementation’. In the document, sus- tainability is framed as a form of economic diversification reflecting the move from a resource- based to a knowledge-based economy – a shift that encompasses the development of commercial space projects within the country, and in particular, Mars Science City. The Mohammed bin Rashid Space Center (MBRSC), which oversees the Mars 2117 project, is mentioned as being integral to the government’s overall sustainability goals over the next ten years. Its anticipated contributions to land and climate observations and supporting environmental protections are linked to the devel- opment of a new satellite programme, where references to the KhalifaSat, a low Earth orbiting sat- ellite designed by the MBRSC, as well as DubaiSat1 and DubaiSat2, promise to capture high-quality images of Earth to address ‘environmental changes, ensure effective urban management, and aid in disaster relief’. Some of these challenges include monitoring the country’s reservoir levels, creating water area maps, tracking changes to surface water, and observing levels of fish stock in the country (mbrsc.ae). Descriptions of Dubai’s new space technologies industry in the sustainability report combine with references to the creation of the first self-cooling ‘eco-homes’ in the UAE indepen- dent of any power grid. These descriptions combine an emphasis on the government’s leading pos- ition in the global space race with a commitment to using related technologies to address ‘innovative solutions to global challenges’ on Earth (see also Mairs, 2017). This is just one example of how the language of sustainability dominates discourses about the UAE’s Mars projects in official publications. It also demonstrates how this vision is different from the logic of development put forward by international organizations like the U.N. emphasiz- ing slow, linear, and continuous growth of ‘developing’ nations in efforts to ‘catch up’ with the so- called North without destroying their eco-systems. Dubai’s vision of sustainability is rather one of explosive and disruptive transformation, where sustainable technologies are a step change out of scarcity, so that emancipatory or revolutionary growth continues to be possible – hence the con- nection to the infinite resources of space. Such shifts in language dovetail with proliferating modes of prediction and preparedness that extend to broader global economic and security net- works. The rebranding of Dubai’s infrastructural ambitions, long connected to exaggerated invest- ments in futuristic architecture and urban development (Kanna, 2011), can be found in other new, ‘transformative’ projects such as Dubai Smart City, innovations in weather modification including regular cloud seeding, and a proposed project to build a mountain to attract more rainfall (Brown, 2018; Perlman, 2016). Drawing connections to the ways in which speculative finance has become the dominant mode of capital accumulation, Adams et al. (2009) call this broader global moment one of actuarial sat- uration, where the science of the actual is replaced by an investment in knowledge about the ‘truth’ of a future known through speculative forecast. Speculative forecast itself ‘has been loosened from the virtue of certainty and redirected as an injunction to characterize and inhabit degrees and kinds of uncertainty’, and where one must constantly adjust oneself ‘to routinized likelihoods, hedged bets and probable outcomes’ (p. 246). Anticipation is argued here to be what Ngai (2005) has else- where referred to as an ‘ambient aesthetic,’ one that is shared globally and at different levels of intensity in all realms of self, community and state.

#### Last argument is a broad neoliberalism thesis - they don’t solve it because of infinite alt causes and it contradicts the rest of the aff. Solvency relies on winning that governments will be better than private actors but that is answered by their argument about corporations taking over the public.

**1AC Werlhof 15 [green]** – Claudia, Professor of Political Science/Women's Studies, University Innsbruck (Austria), 2015 (“Neoliberal Globalization: Is There an Alternative to Plundering the Earth?” Global Research, May 25th, Available Online at http://www.globalresearch.ca/neoliberal-globalization-is-there-an-alternative-to-plundering-the-earth/24403)

At the center of both old and new economic liberalism lies: Self-interest and individualism; segregation of ethical principles and economic affairs, in other words: a process of ‘de-bedding’ economy from society; economic rationality as a mere cost-benefit calculation and profit maximization; competition as the essential driving force for growth and progress; specialization and the replacement of a subsistence economy with profit-oriented foreign trade (‘comparative cost advantage’); and the proscription of public (state) interference with market forces.[3] Where the new economic liberalism outdoes the old is in its global claim. Today’s economic liberalism functions as a model for each and everyone: all parts of the economy, all sectors of society, of life/nature itself. As a consequence, the once “de-bedded” economy now claims to “im-bed” everything, including political power. Furthermore, a new twisted “economic ethics” (and with it a certain idea of “human nature”) emerges that mocks everything from so-called do-gooders to altruism to selfless help to care for others to a notion of responsibility.[4] This goes as far as claiming that the common good depends entirely on the uncontrolled egoism of the individual and, especially, on the prosperity of transnational corporations. The allegedly necessary “freedom” of the economy – which, paradoxically, only means the freedom of corporations – hence consists of a freedom from responsibility and commitment to society. The maximization of profit itself must occur within the shortest possible time; this means, preferably, through speculation and “shareholder value”. It must meet as few obstacles as possible. Today, global economic interests outweigh not only extra-economic concerns but also national economic considerations since corporations today see themselves beyond both community and nation.[5] A “level playing field” is created that offers the global players the best possible conditions. This playing field knows of no legal, social, ecological, cultural or national “barriers”.[6] As a result, economic competition plays out on a market that is free of all non-market, extra-economic or protectionist influences – unless they serve the interests of the big players (the corporations), of course. The corporations’ interests – their maximal growth and progress – take on complete priority. This is rationalized by alleging that their well-being means the well-being of small enterprises and workshops as well. The difference between the new and the old economic liberalism can first be articulated in quantitative terms: after capitalism went through a series of ruptures and challenges – caused by the “competing economic system”, the crisis of capitalism, post-war “Keynesianism” with its social and welfare state tendencies, internal mass consumer demand (so-called Fordism), and the objective of full employment in the North. The liberal economic goals of the past are now not only euphorically resurrected but they are also “globalized”. The main reason is indeed that the competition between alternative economic systems is gone. However, to conclude that this confirms the victory of capitalism and the “golden West” over “dark socialism” is only one possible interpretation. Another – opposing – interpretation is to see the “modern world system” (which contains both capitalism and socialism) as having hit a general crisis which causes total and merciless competition over global resources while leveling the way for investment opportunities, i.e. the valorization of capital.[7] The ongoing globalization of neoliberalism demonstrates which interpretation is right. Not least, because the differences between the old and the new economic liberalism can not only be articulated in quantitative terms but in qualitative ones too. What we are witnessing are completely new phenomena: instead of a democratic “complete competition” between many small enterprises enjoying the freedom of the market, only the big corporations win. In turn, they create new market oligopolies and monopolies of previously unknown dimensions. The market hence only remains free for them, while it is rendered unfree for all others who are condemned to an existence of dependency (as enforced producers, workers and consumers) or excluded from the market altogether (if they have neither anything to sell or buy). About fifty percent of the world’s population fall into this group today, and the percentage is rising.[8] Anti-trust laws have lost all power since the transnational corporations set the norms. It is the corporations – not “the market” as an anonymous mechanism or “invisible hand” – that determine today’s rules of trade, for example prices and legal regulations. This happens outside any political control. Speculation with an average twenty percent profit margin edges out honest producers who become “unprofitable”.[9] Money becomes too precious for comparatively non-profitable, long-term projects, or projects that only – how audacious! – serve a good life. Money instead “travels upwards” and disappears. Financial capital determines more and more what the markets are and do.[10] By delinking the dollar from the price of gold, money creation no longer bears a direct relationship to production”.[11] Moreover, these days most of us are – exactly like all governments – in debt. It is financial capital that has all the money – we have none.[12] Small, medium, even some bigger enterprises are pushed out of the market, forced to fold or swallowed by transnational corporations because their performances are below average in comparison to speculation – rather: spookulation – wins. The public sector, which has historically been defined as a sector of not-for-profit economy and administration, is “slimmed” and its “profitable” parts (“gems”) handed to corporations (privatized). As a consequence, social services that are necessary for our existence disappear. Small and medium private businesses – which, until recently, employed eighty percent of the workforce and provided normal working conditions – are affected by these developments as well. The alleged correlation between economic growth and secure employment is false. When economic growth is accompanied by the mergers of businesses, jobs are lost.[13] If there are any new jobs, most are precarious, meaning that they are only available temporarily and badly paid. One job is usually not enough to make a living.[14] This means that the working conditions in the North become akin to those in the South, and the working conditions of men akin to those of women – a trend diametrically opposed to what we have always been told. Corporations now leave for the South (or East) to use cheap – and particularly female – labor without union affiliation. This has already been happening since the 1970s in the “Export Processing Zones” (EPZs, “world market factories” or “maquiladoras”), where most of the world’s computer chips, sneakers, clothes and electronic goods are produced.[15] The EPZs lie in areas where century-old colonial-capitalist and authoritarian-patriarchal conditions guarantee the availability of cheap labor.[16] The recent shift of business opportunities from consumer goods to armaments is a particularly troubling development.[17] It is not only commodity production that is “outsourced” and located in the EPZs, but service industries as well. This is a result of the so-called Third Industrial Revolution, meaning the development of new information and communication technologies. Many jobs have disappeared entirely due to computerization, also in administrative fields.[18] The combination of the principles of “high tech” and “low wage”/”no wage” (always denied by “progress” enthusiasts) guarantees a “comparative cost advantage” in foreign trade. This will eventually lead to “Chinese wages” in the West. A potential loss of Western consumers is not seen as a threat. A corporate economy does not care whether consumers are European, Chinese or Indian. The means of production become concentrated in fewer and fewer hands, especially since finance capital – rendered precarious itself – controls asset values ever more aggressively. New forms of private property are created, not least through the “clearance” of public property and the transformation of formerly public and small-scale private services and industries to a corporate business sector. This concerns primarily fields that have long been (at least partly) excluded from the logic of profit – e.g. education, health, energy or water supply/disposal. New forms of so-called enclosures emerge from today’s total commercialization of formerly small-scale private or public industries and services, of the “commons”, and of natural resources like oceans, rain forests, regions of genetic diversity or geopolitical interest (e.g. potential pipeline routes), etc.[19] As far as the new virtual spaces and communication networks go, we are witnessing frantic efforts to bring these under private control as well.[20] All these new forms of private property are essentially created by (more or less) predatory forms of appropriation. In this sense, they are a continuation of the history of so-called original accumulation which has expanded globally, in accordance with to the motto: “Growth through expropriation!”[21] Most people have less and less access to the means of production, and so the dependence on scarce and underpaid work increases. The destruction of the welfare state also destroys the notion that individuals can rely on the community to provide for them in times of need. Our existence relies exclusively on private, i.e. expensive, services that are often of much worse quality and much less reliable than public services. (It is a myth that the private always outdoes the public.) What we are experiencing is undersupply formerly only known by the colonial South. The old claim that the South will eventually develop into the North is proven wrong. It is the North that increasingly develops into the South. We are witnessing the latest form of “development”, namely, a world system of underdevelopment.[22] Development and underdevelopment go hand in hand.[23] This might even dawn on “development aid” workers soon. It is usually women who are called upon to counterbalance underdevelopment through increased work (“service provisions”) in the household. As a result, the workload and underpay of women takes on horrendous dimensions: they do unpaid work inside their homes and poorly paid “housewifized” work outside.[24] Yet, commercialization does not stop in front of the home’s doors either. Even housework becomes commercially co-opted (“new maid question”), with hardly any financial benefits for the women who do the work.[25] Not least because of this, women are increasingly coerced into prostitution, one of today’s biggest global industries.[26] This illustrates two things: a) how little the “emancipation” of women actually leads to “equal terms” with men; and b) that “capitalist development” does not imply increased “freedom” in wage labor relations, as the Left has claimed for a long time.[27] If the latter were the case, then neoliberalism would mean the voluntary end of capitalism once it reaches its furthest extension. This, however, does not appear likely. Today, hundreds of millions of quasi-slaves, more than ever before, exist in the “world system.”[28] The authoritarian model of the “Export Processing Zones” is conquering the East and threatening the North. The redistribution of wealth runs ever more – and with ever accelerated speed – from the bottom to the top. The gap between the rich and the poor has never been wider. The middle classes disappear. This is the situation we are facing. It becomes obvious that neoliberalism marks not the end of colonialism but, to the contrary, the colonization of the North. This new “colonization of the world”[29] points back to the beginnings of the “modern world system” in the “long 16th century”, when the conquering of the Americas, their exploitation and colonial transformation allowed for the rise and “development” of Europe.[30] The so-called “children’s diseases” of modernity keep on haunting it, even in old age. They are, in fact, the main feature of modernity’s latest stage. They are expanding instead of disappearing. Where there is no South, there is no North; where there is no periphery, there is no center; where there is no colony, there is no – in any case no “Western” – civilization.[31] Austria is part of the world system too. It is increasingly becoming a corporate colony (particularly of German corporations). This, however, does not keep it from being an active colonizer itself, especially in the East.[32] Social, cultural, traditional and ecological considerations are abandoned and give way to a mentality of plundering. All global resources that we still have – natural resources, forests, water, genetic pools – have turned into objects of utilization. Rapid ecological destruction through depletion is the consequence. If one makes more profit by cutting down trees than by planting them, then there is no reason not to cut them.[33] Neither the public nor the state interferes, despite global warming and the obvious fact that the clearing of the few remaining rain forests will irreversibly destroy the earth’s climate – not to mention the many other negative effects of such actions.[34] Climate, animal, plants, human and general ecological rights are worth nothing compared to the interests of the corporations – no matter that the rain forest is not a renewable resource and that the entire earth’s ecosystem depends on it. If greed, and the rationalism with which it is economically enforced, really was an inherent anthropological trait, we would have never even reached this day. The commander of the Space Shuttle that circled the earth in 2005 remarked that “the center of Africa was burning”. She meant the Congo, in which the last great rain forest of the continent is located. Without it there will be no more rain clouds above the sources of the Nile. However, it needs to disappear in order for corporations to gain free access to the Congo’s natural resources that are the reason for the wars that plague the region today. After all, one needs diamonds and coltan for mobile phones. Today, everything on earth is turned into commodities, i.e. everything becomes an object of “trade” and commercialization (which truly means liquidation, the transformation of all into liquid money). In its neoliberal stage it is not enough for capitalism to globally pursue less cost-intensive and preferably “wageless” commodity production. The objective is to transform everyone and everything into commodities, including life itself.[35] We are racing blindly towards the violent and absolute conclusion of this “mode of production”, namely total capitalization/liquidation by “monetarization”.[36] We are not only witnessing perpetual praise of the market – we are witnessing what can be described as “market fundamentalism”. People believe in the market as if it was a god. There seems to be a sense that nothing could ever happen without it. Total global maximized accumulation of money/capital as abstract wealth becomes the sole purpose of economic activity. A “free” world market for everything has to be established – a world market that functions according to the interests of the corporations and capitalist money. The installment of such a market proceeds with dazzling speed. It creates new profit possibilities where they have not existed before, e.g. in Iraq, Eastern Europe or China. One thing remains generally overlooked: the abstract wealth created for accumulation implies the destruction of nature as concrete wealth. The result is a “hole in the ground” and next to it a garbage dump with used commodities, outdated machinery and money without value.[37] However, once all concrete wealth (which today consists mainly of the last natural resources) will be gone, abstract wealth will disappear as well. It will, in Marx’s words, “evaporate”. The fact that abstract wealth is not real wealth will become obvious, and so will the answer to the question of which wealth modern economic activity has really created. In the end it is nothing but monetary wealth (and even this mainly exists virtually or on accounts) that constitutes a monoculture controlled by a tiny minority. Diversity is suffocated and millions of people are left wondering how to survive. And really: how do you survive with neither resources nor means of production nor money? The nihilism of our economic system is evident. The whole world will be transformed into money – and then it will disappear. After all, money cannot be eaten. What no one seems to consider is the fact that it is impossible to re-transform commodities, money, capital and machinery into nature or concrete wealth. It seems that underlying all “economic development” is the assumption that “resources”, the “sources of wealth”,[38] are renewable and everlasting – just like the “growth” they create.[39] The notion that capitalism and democracy are one is proven a myth by neoliberalism and its “monetary totalitarianism”.[40] The primacy of politics over economy has been lost. Politicians of all parties have abandoned it. It is the corporations that dictate politics. Where corporate interests are concerned, there is no place for democratic convention or community control. Public space disappears. The res publica turns into a res privata, or – as we could say today – a res privata transnationale (in its original Latin meaning, privare means “to deprive”). Only those in power still have rights. They give themselves the licenses they need, from the “license to plunder” to the “license to kill”.[41] Those who get in their way or challenge their “rights” are vilified, criminalized and to an increasing degree defined as “terrorists” or, in the case of defiant governments, as “rogue states” – a label that usually implies threatened or actual military attack, as we can see in the cases of Yugoslavia, Afghanistan and Iraq, and maybe Syria and Iran in the near future. U.S. President Bush had even spoken of the possibility of “preemptive” nuclear strikes should the U.S. feel endangered by weapons of mass destruction.[42] The European Union did not object.[43] Neoliberalism and war are two sides of the same coin.[44] Free trade, piracy and war are still “an inseparable three” – today maybe more so than ever. War is not only “good for the economy” but is indeed its driving force and can be understood as the “continuation of economy with other means”.[45] War and economy have become almost indistinguishable.[46] Wars about resources – especially oil and water – have already begun.[47] The Gulf Wars are the most obvious examples. Militarism once again appears as the “executor of capital accumulation” – potentially everywhere and enduringly.[48] Human rights and rights of sovereignty have been transferred from people, communities and governments to corporations.[49] The notion of the people as a sovereign body has practically been abolished. We have witnessed a coup of sorts. The political systems of the West and the nation state as guarantees for and expression of the international division of labor in the modern world system are increasingly dissolving.[50] Nation states are developing into “periphery states” according to the inferior role they play in the proto-despotic “New World Order”.[51] Democracy appears outdated. After all, it “hinders business”.[52] The “New World Order” implies a new division of labor that does no longer distinguish between North and South, East and West – today, everywhere is South. An according International Law is established which effectively functions from top to bottom (“top-down”) and eliminates all local and regional communal rights. And not only that: many such rights are rendered invalid both retroactively and for the future.[53] The logic of neoliberalism as a sort of totalitarian neo-mercantilism is that all resources, all markets, all money, all profits, all means of production, all “investment opportunities”, all rights and all power belong to the corporations only. To paraphrase Richard Sennett: “Everything to the Corporations!”[54] One might add: “Now!” The corporations are free to do whatever they please with what they get. Nobody is allowed to interfere. Ironically, we are expected to rely on them to find a way out of the crisis we are in. This puts the entire globe at risk since responsibility is something the corporations do not have or know. The times of social contracts are gone.[55] In fact, pointing out the crisis alone has become a crime and all critique will soon be defined as “terror” and persecuted as such.[56] IMF Economic Medicine Since the 1980s, it is mainly the Structural Adjustment Programs (SAPs) of the World Bank and the IMF that act as the enforcers of neoliberalism. These programs are levied against the countries of the South which can be extorted due to their debts. Meanwhile, numerous military interventions and wars help to take possession of the assets that still remain, secure resources, install neoliberalism as the global economic politics, crush resistance movements (which are cynically labeled as “IMF uprisings”), and facilitate the lucrative business of reconstruction.[57] In the 1980s, Ronald Reagan and Margaret Thatcher introduced neoliberalism in Anglo-America. In 1989, the so-called “Washington Consensus” was formulated. It claimed to lead to global freedom, prosperity and economic growth through “deregulation, liberalization and privatization”. This has become the credo and promise of all neoliberals. Today we know that the promise has come true for the corporations only – not for anybody else. In the Middle East, the Western support for Saddam Hussein in the war between Iraq and Iran in the 1980s, and the Gulf War of the early 1990s, announced the permanent U.S. presence in the world’s most contested oil region. In continental Europe, neoliberalism began with the crisis in Yugoslavia caused by the Structural Adjustment Programs (SAPs) of the World Bank and the IMF. The country was heavily exploited, fell apart and finally beset by a civil war over its last remaining resources.[58] Since the NATO war in 1999, the Balkans are fragmented, occupied and geopolitically under neoliberal control.[59] The region is of main strategic interest for future oil and gas transport from the Caucasus to the West (for example the “Nabucco” gas pipeline that is supposed to start operating from the Caspian Sea through Turkey and the Balkans by 2011.[60] The reconstruction of the Balkans is exclusively in the hands of Western corporations. All governments, whether left, right, liberal or green, accept this. There is no analysis of the connection between the politics of neoliberalism, its history, its background and its effects on Europe and other parts of the world. Likewise, there is no analysis of its connection to the new militarism.

#### It’s inevitable and refusing non “ideal” solutions turns their offense.

**Bryant, 12**—Professor of Philosophy at Collin College (Levi, “We’ll Never Do Better Than a Politician: Climate Change and Purity,” <https://larvalsubjects.wordpress.com/2012/05/11/well-never-do-better-than-a-politician-climate-change-and-purity/>, dml)

It is quite true that it is the system of global capitalism or the market that has created our climate problems (though, as Jared Diamond shows in Collapse, other systems of production have also produced devastating climate problems). In its insistence on profit and expansion in each economic quarter, markets as currently structured provide no brakes for environmental destructive actions. The system is itself pathological.

However, pointing this out and deriding market based solutions **doesn’t get us very far**. In fact, such a response to proposed market-based solutions is **downright dangerous** and **irresponsible**. The fact of the matter is that 1) we currently live in a market based world, 2) there is not, in the foreseeable future an alternative system on the horizon, and 3), above all, **we need to do something now**. We **can’t afford to reject interventions** simply because they **don’t meet our ideal conceptions** of how things should be. We have to **work with the world that is here**, not the one that we would like to be here. And here it’s crucial to note that pointing this out **does not entail** that we shouldn’t work for producing that other world. It just means that we have to grapple with the world that is **actually there before us**.

It pains me to write this post because I remember, with great bitterness, the diatribes hardcore Obama supporters leveled against legitimate leftist criticisms on the grounds that these critics were completely unrealistic idealists who, in their demand for “purity”, were asking for “ponies and unicorns”. This rejoinder always seemed to ignore that words have power and that Obama, through his profound power of rhetoric, had, at least the power to shift public debates and frames, opening a path to making new forms of policy and new priorities possible. The tragedy was that he didn’t use that power, though he has gotten better.

I do not wish to denounce others and dismiss their claims on these sorts of grounds. As a Marxist anarchists, I do believe that we should fight for the creation of an alternative hominid ecology or social world. I think that the call to commit and fight, to put alternatives on the table, has been one of the most powerful contributions of thinkers like Zizek and Badiou. If we don’t commit and fight for alternatives those alternatives will never appear in the world. Nonetheless, we still have to grapple with the world we find ourselves in. And it is here, in my encounters with some Militant Marxists, that I sometimes find it difficult to avoid the conclusion that they are **unintentionally aiding** and **abetting** the **very things they claim to be fighting**. In their **refusal to become impure**, to **work with situations** or **assemblages** as we find them, to **sully their hands**, they end up **reproducing the very system** they wish to **topple** and **change**. Narcissistically they get to sit there, smug in their superiority and purity, while **everything continues as it did before** because they’ve **refused to become politicians** or engage in the **difficult concrete work** of assembling human and nonhuman actors to **render another world possible**. As a consequence, they occupy the position of Hegel’s beautiful soul that denounces the horrors of the world, celebrate the beauty of their soul, while depending on those horrors of the world to sustain their own position.

To engage in politics is to engage in networks or ecologies of relations between humans and nonhumans. To engage in ecologies is to descend into networks of causal relations and feedback loops that you cannot completely master and that will modify your own commitments and actions. But there’s **no other way**, there’s no way around this, and we **do need to act now**.