## 1NC

#### Counterplan: The appropriation of outer space for the Search for Extraterrestrial Intelligence by private entities is unjust except for Chinese private entities

#### Their entire aff is literally about Breakthrough Starshot, which is a US-based company – force them to name Chinese private companies interested in ETI contact in the 1AR, or else this counterplan \*\*wholly\* solves the aff

#### CCP legitimacy high now

Yvonne Murray 22, “2021 saw China's Xi Jinping tighten grip on power,” 1/4/22, RTE (Ireland's National Public Service Media), https://www.rte.ie/news/2021/1231/1269202-china-year-in-review/

In 2021, while most of the world struggled to contain the virus, China kept its borders sealed, stamped out outbreaks with ruthless efficiency and in its zero-Covid bubble, set about turbo charging internal reforms.

It was the year, the Chinese leader, Xi Jinping, declared "the east is rising and the west is in decline". But his confidence was cautious, warning officials not to write off their main rival, the United States.

And as this superpower rivalry deepened, taking on what other countries feared was a distinctly Cold War hue, Taiwan took centre stage.

The US President Joe Biden appeared to break with Washington's long-held policy of "strategic ambiguity" (which is meant to keep everyone in the dark as to whether the US would defend Taiwan) by stating the US would indeed come to the island’s defence. His aides later back-pedalled on his comments.

When an unprecedented number of Chinese warplanes flew past Taiwan amid Beijing’s threats to take the island, many speculated the invasion was nigh.

And while China continued to look for parity of esteem for its authoritarian form of governance, especially in international institutions built on democratic norms, Taiwan became the touchstone in a global clash of values.

Democracy versus authoritarianism

The clashes came thick and fast. In the Spring, politicians in Europe, who had criticised human rights abuses in Xinjiang, were hit with sanctions by Beijing. The shelving of the China Investment Agreement as a result, was a clear sign that Sino-European relations had taken a nosedive. In the autumn, Beijing lost a good friend with the exit of Germany’s Chancellor, Angela Merkel.

Then the decision by an EU country, Lithuania, to allow Taiwan to open a representative office under its own name, drew fury from Beijing, culminating in the sudden flight of Lithuanian diplomats out of China.

In another dramatic diplomatic incident, Huawei’s senior executive, Meng Wanzhou, reached a deal with US prosecutors in her extradition case, allowing her to return to China.

Within hours, the two Canadian citizens, Michael Kovrig and Michael Spavor, detained on spying charges in China were suddenly released - Beijing appearing to make no secret of its hostage diplomacy. Irish businessman Richard O’Halloran, meanwhile, remained detained without charge in Shanghai.

At the same time, the number of foreign journalists inside China, dwindled further. Reporters who tried to hold the one-party state government to account on issues like the re-education camps in Xinjiang, the ongoing erosion of democracy in Hong Kong or the virus origins were frequently called "fake news" and "hostile foreign forces" by a regime now entirely intolerant of scrutiny.

When I fled Beijing with my family in March after years of intimidation and harassment by the authorities, there were no Irish journalists, reporting for Irish outlets, left in China.

In our Taipei exile, we joined a burgeoning number of China correspondents forced to cover the superpower from a distance.

In 2021, it seemed the chasm between China and much of the rest of the world - or to use Chairman Xi’s framing "east and west" - yawned wider.

The home front

But despite the chilly geopolitical atmosphere, on home turf this year the leadership was in a celebratory mood. Pomp and pageantry marked 100 years of the Communist Party in July and the party leader, Xi Jinping, used the moment to deliver a colourful message to his own people and more pointedly to the outside world.

"We will never allow anyone to bully, oppress or subjugate China," he said, to whoops and cheers in Tiananmen Square.

"Anyone who dares try to do that will have their heads bashed bloody against the Great Wall of Steel forged by over 1.4 billion Chinese people," he said.

Domestically, there is no doubt that the pandemic delivered a massive boost for the leadership. The Chinese public, looking at the infection and death rates in advanced democracies, felt a sense of national pride that China had to a large extent remained Covid-free, and the downsides of the policies, such as impact on mental health, received little attention.

However, those Chinese people who tried to document the chaos of the early response to the virus were forgotten. One citizen journalist, Zhang Zhan, is now dying in prison for attempting to report the reality of the Wuhan lockdown, countering the official propaganda. Others simply disappeared.

The government continued to push their own narratives on the origins of the virus, suggesting, alternately, that it came in on frozen food imports from Europe or it was manufactured in a US laboratory - both widely accepted by Chinese citizens and promoted by officials on international social media platforms.

The WHO's heavily choreographed mission to Wuhan resulting in the verdict that a leak from a Wuhan lab was "extremely unlikely" was another victory for the Communist Party. (Although the WHO chief, Tedros Adhanom, swiftly put the lab leak theory back on the table as soon as the team left China.)

Common prosperity

But behind the outward confidence, China’s leaders spoke of major internal challenges: a demographic crisis, pressing energy and food security issues as well as an unsustainable wealth gap which makes China one of the most unequal societies in the world.

They know that the Party’s social contract with its citizens (to stay out of politics while leaders deliver growth and jobs) could suffer in a slowing economy, damaging their legitimacy.

2021 was in many ways a dress rehearsal for 2022

And so, under the banner of "common prosperity," the government enacted a series of crackdowns on technology companies, brought wealthy entrepreneurs to heel, banned expensive online education platforms and reined in the overheated real estate sector.

The government also went after the online gaming industry, which state media labelled "spiritual opium," limiting playing time for teenagers and prompting the American makers of the game Fortnite to pull the plug on their China venture.

With all this set to continue, 2021 was in many ways a dress rehearsal for 2022 - the year in which Xi, often compared to Mao, is expected to enter an unprecedented third term as leader of an unapologetically authoritarian, deeply nationalistic and increasingly powerful regime.

#### The plan alienates the PLA – they view space dominance as the linchpin of China’s legitimacy – specifically, public-private tech development is key

Economic Times 20 [(Economic Times, Indian daily newspaper, internally cites Dean Cheng, Senior Research Fellow at the Heritage Foundation and the Davis Institute for National Security and Foreign Policy, former analyst in the International Security and Space Program at the Office of Technology Assessment, BA in Politics from Princeton University) “China attempting to militarize space as it seeks to modernize its military power,” 8/31/2020] JL

The Jamestown Foundation, a US think-tank, hosted a webinar on August 19 entitled "China's Space Ambitions: Emerging Dimensions of Competition." One presenter, Dean Cheng, Senior Research Fellow at The Heritage Foundation, noted that Beijing's space programme is linked to China's central concept of comprehensive national power. "This is basically how the Chinese think about how they rack and stack, how they compare with other countries."

China recognises that military power is important, but it is not the only factor in being a great power. Cheng drew a parallel with the former USSR, where military power alone did not ensure survival of that communist state. Other comprehensive national power factors are political unity, economic power, diplomatic strength, science and technology, and even culture. "Space touches every one of these aspects in comprehensive national power, and that is a part of why Chinese see space as so important."

Indeed, a strong space industrial complex will generate benefits that ripple through the rest of China's economy. Furthermore, he said space achievements "promote pride within China, especially for the Chinese Communist Party (CCP) ... It's symbolic of how far China has come," he said, and "it gives the CCP legitimacy".

China is pushing into space services, including satellite launches, satellite applications and Earth observation/satellite imagery for others. Satellite customers include Belarus, Laos, Pakistan and Venezuela, for example, attracting hard currency and influence. Cheng said most underestimate the impact this has, as such countries grow almost totally dependent on Chinese equipment, assets and training over time. Incidentally, China could have manufactured back doors into these systems for foreigners to allow it access.

Mark Stokes, Executive Director at the US-based Project 2049 Institute think-tank, said in the same webinar that PLA requirements have always been fundamental to development of Chinese space capabilities. Potential PLA space missions in support of joint warfighting in a crisis include targeting (battlefield surveillance, electronic reconnaissance and ocean surveillance), communications, PNT services (obtaining target data, navigation information, navigation support and timing services), space jamming (encompassing space communications, radar, electro-optical and PNT) and space protection.

Stokes said the end of 2015 was "significant" for Chinese space efforts because consolidation of end-users under the PLA's Strategic Support Force (PLASSF) occurred, specifically within the Space Systems Department. In terms of developing and meeting requirements, the PLASSF is now "much more efficient," the American analyst posited.

Indeed, China created its space force in 2015, just a few months after Russia. After formally establishing its Space Force in December 2019, the US is still getting its equivalent off the ground. Cheng said both China and Russia have been pushing to militarise space, even though such a term is probably meaningless given that 95 per cent of space technology has dual applications for both military and civilian use. Certainly, outer space can no longer be viewed as a sanctuary.

Stokes said that "not much has changed really in terms of the space launch infrastructure and the launch, tracking and control of space ... but they are now integrated with end-users, and that is going to have an effect on making the whole system more efficient."

China has freedom of action in space, and the creation of the PLASSF and consolidation of space/counter-space research, development and acquisition, as well as training and operations, have benefitted from a single integrated command. The PLA's ability to interfere with American military operations in places like Taiwan will continue to grow yearly.

Cheng said, "The Chinese see future war as revolving around joint operations, which are not just land, air and sea forces." They also include the outer space and electronic warfare domains, which are necessary for information dominance." China, therefore, wishes to deny an adversary like the US the use of space, plus it needs to give the Chinese military every advantage.

China has therefore developed the ability to target hostile space-based assets (from the ground or space) and their all-important data-links. Indeed, jamming and electronic warfare complement anti-satellite weapons (which China has already tested), any of which can achieve effective mission kills against US and allied satellites. Stokes has not yet ascertained which agency is responsible for satellite kinetic kills, but it could well be the PLA Rocket Force, which is traditionally very tightly controlled by the Central Military Commission.

A detailed report entitled China's Space and Counter-space Capabilities and Activities, prepared for the US-China Economic and Security Review Commission, was published on March 30. Its authors, Mark Stokes, Gabriel Alvarado, Emily Weinstein and Ian Easton, summarised China's counter-space capabilities as follows.

"China has an operational counter-space capability that will evolve through 2020 and out to 2035. These capabilities include anti-satellite kinetic kill vehicles (KKV) and space electronic countermeasures ... On the non-kinetic side, the PLA has an operational ground-based satellite electronic countermeasures capability designed to disrupt adversary use of satellite communications, navigation, search and rescue, missile early warning and other satellites through use of jamming."

China obtained its first ground-based satellite jammers from Ukraine in the late 1990s, but it has developed its own solutions since then. "The PLA is capable of carrying out electronic countermeasures to disrupt, deny, deceive or degrade space services. Jamming prevents users from receiving intended signals and can be accomplished by attacking uplinks and downlinks.

The PLA and defence industry are developing and deploying jammers capable of targeting satellite communications over a large range of frequencies, including dedicated military communication bands. The PLASSF also has advanced cyber capabilities that could be applied in parallel with counter-space operations."

Nonetheless, the report asserted that the US still assumed a technological lead in space.

"China also is carrying out research, development and testing on potential space-based counter-space systems. The PLASSF and defense industry have carried out advanced satellite maneuvers and are likely testing orbital technologies that could be applied to counter-space operations." The PLASSF Network Systems Department probably oversees satellite jamming operations.

#### China’s “space dream” is key to Xi credibility – plan is a flip flop that undermines legitimacy

Kharpal 21 – senior technology correspondent based in Guangzhou, China at CNBC [Arjun, “China once said it couldn’t put a potato in space. Now it’s eyeing Mars,” 6/30/2021, https://www.cnbc.com/2021/06/30/china-space-goals-ccp-100th-anniversary.html]

Fast forward more than six decades and President Xi Jinping, China’s current leader, is seen congratulating three astronauts who were sent to the country’s own space station earlier this month.

Since Mao’s comments, China has launched satellites, sent humans to space and is now planning to build a base on Mars, achievements and ambitions Beijing has highlighted as the centennial of the CCP’s founding approaches.

Space is now another battleground between the U.S. and China amid a broader technological rivalry for supremacy, one that could have scientific and military implications on Earth.

“President Xi Jinping has declared that China’s ‘Space Dream’ is to overtake all nations and become the leading space power by 2045,” said Christopher Newman, professor of space law and policy at the U.K.’s Northumbria University. “This all feeds into China’s ambition to be the world’s single science and technology superpower.”

Why space?

In March, China highlighted space as a “frontier technology” it would focus on and research into the “origin and evolution of the universe.”

But there are other implications too.

“It is important for China and the US because it can advance technological development” in areas such as “national security and some socioeconomic development,” according to Sa’id Mosteshar, director of the London Institute of Space Policy and Law, and research fellow Christoph Beischl.

While experts doubt it could spiral into war in space, extra-terrestrial activities can support military operations on Earth.

Space achievements are also about the optics.

Through space exploration to the Moon or to Mars, “China and the U.S. display their technological sophistication to the domestic audience and the world, increasing their domestic and international prestige, domestic legitimacy and international influence,” Mosteshar and Beischl said.

#### And the Chinese private sector is crucial for space competition – Xi has promised and said so before

Patel 21 — (Neel V. Patel, Neel is the space reporter for MIT Technology Review, and he writes The Airlock newsletter. Before joining, he worked as a freelance science and technology journalist, contributing stories to Popular Science, The Daily Beast, Slate, Wired, the Verge, and elsewhere. Prior to that, he was an associate editor for Inverse, where he grew and led the website’s space coverage., “China’s surging private space industry is out to challenge the US“, MIT Technology Review, 1-21-2021, Available Online at https://www.technologyreview.com/2021/01/21/1016513/china-private-commercial-space-industry-dominance, accessed 1-11-2022, HKR-AR)

Until recently, China’s space activity has been overwhelmingly dominated by two state-owned enterprises: the China Aerospace Science & Industry Corporation Limited (CASIC) and the China Aerospace Science and Technology Corporation (CASC). A few private space firms have been allowed to operate in the country for a while: for example, there’s the China Great Wall Industry Corporation Limited (in reality a subsidiary of CASC), which has provided commercial launches since it was established in 1980. But for the most part, China’s commercial space industry has been nonexistent. Satellites were expensive to build and launch, and they were too heavy and large for anything but the biggest rockets to actually deliver to orbit. The costs involved were too much for anything but national budgets to handle.

That all changed this past decade as the costs of making satellites and launching rockets plunged. In 2014, a year after Xi Jinping took over as the new leader of China, the Chinese government decided to treat civil space development as a key area of innovation, as it had already begun doing with AI and solar power. It issued a policy directive called Document 60 that year to enable large private investment in companies interested in participating in the space industry.

“Xi’s goal was that if China has to become a critical player in technology, including in civil space and aerospace, it was critical to develop a space ecosystem that includes the private sector,” says Namrata Goswami, a geopolitics expert based in Montgomery, Alabama, who’s been studying China’s space program for many years. “He was taking a cue from the American private sector to encourage innovation from a talent pool that extended beyond state-funded organizations.”

As a result, there are now 78 commercial space companies operating in China, according to a 2019 report by the Institute for Defense Analyses. More than half have been founded since 2014, and the vast majority focus on satellite manufacturing and launch services.

For example, Galactic Energy, founded in February 2018, is building its Ceres rocket to offer rapid launch service for single payloads, while its Pallas rocket is being built to deploy entire constellations. Rival company i-Space, formed in 2016, became the first commercial Chinese company to make it to space with its Hyperbola-1 in July 2019. It wants to pursue reusable first-stage boosters that can land vertically, like those from SpaceX. So does LinkSpace (founded in 2014), although it also hopes to use rockets to deliver packages from one terrestrial location to another.

Spacety, founded in 2016, wants to turn around customer orders to build and launch its small satellites in just six months. In December it launched a miniaturized version of a satellite that uses 2D radar images to build 3D reconstructions of terrestrial landscapes. Weeks later, it released the first images taken by the satellite, Hisea-1, featuring three-meter resolution. Spacety wants to launch a constellation of these satellites to offer high-quality imaging at low cost.

To a large extent, China is following the same blueprint drawn up by the US: using government contracts and subsidies to give these companies a foot up. US firms like SpaceX benefited greatly from NASA contracts that paid out millions to build and test rockets and space vehicles for delivering cargo to the International Space Station. With that experience under its belt, SpaceX was able to attract more customers with greater confidence.

Venture capital is another tried-and-true route. The IDA report estimates that VC funding for Chinese space companies was up to $516 million in 2018—far shy of the $2.2 billion American companies raised, but nothing to scoff at for an industry that really only began seven years ago. At least 42 companies had no known government funding.

And much of the government support these companies do receive doesn’t have a federal origin, but a provincial one. “[These companies] are drawing high-tech development to these local communities,” says Hines. “And in return, they’re given more autonomy by the local government.” While most have headquarters in Beijing, many keep facilities in Shenzhen, Chongqing, and other areas that might draw talent from local universities.

There’s also one advantage specific to China: manufacturing. “What is the best country to trust for manufacturing needs?” asks James Zheng, the CEO of Spacety’s Luxembourg headquarters. “It’s China. It’s the manufacturing center of the world.” Zheng believes the country is in a better position than any other to take advantage of the space industry’s new need for mass production of satellites and rockets alike.

Making friends

The most critical strategic reason to encourage a private space sector is to create opportunities for international collaboration—particularly to attract customers wary of being seen to mix with the Chinese government. (US agencies and government contractors, for example, are barred from working with any groups the regime funds.) Document 60 and others issued by China’s National Development and Reform Commission were aimed not just at promoting technological innovation, but also at drawing in foreign investment and maximizing a customer base beyond Chinese borders.

**“China realizes there are certain things they cannot get on their own,”** says Frans von der Dunk, a space policy expert at the University of Nebraska–Lincoln. Chinese companies like LandSpace and MinoSpace have worked to accrue funding through foreign investment, escaping dependence on state subsidies. And by avoiding state funding, a company can also avoid an array of restrictions on what it can and can’t do (such as constraints on talking with the media). Foreign investment also makes it easier to compete on a global scale: you’re taking on clients around the world, launching from other countries, and bringing talent from outside China.

#### That factionalizes the CCP and emboldens challenges to Xi – the PLA is increasingly powerful and not unconditionally subservient

Simpson 16 [(Kurtis, Centre Director with Defence Research and Development Canada, has been conducting research on China’s leadership, Communist Party politics, the People’s Liberation Army and foreign policy for over 30 years,Master’s Degree and a Ph.D from York University, previously served as an intelligence analyst at the Privy Council Office and leader of the Asia Research Section at the Department of National Defence’s Chief Defence Intelligence (CDI) organization) “China’s Re-Emergence: Assessing Civilian-Military Relations In Contemporary Era – Analysis,” Eurasia Review, 12/21/2016] JL

Paralleling divided loyalties between Chinese Party, military and government bodies, one must also recognize that within each, factions exist, based upon generational, personal, professional, geographic, or institutional allegiances.19 These minor fault lines are most pronounced during crises, and they continue independent of professionalization.20 As was demonstrated by the civil-military dynamics of the Chinese government’s suppression of student demonstrators, both divisions and allegiances of interests emerged with respect to how to contain this situation and factional interests largely determined which troops would carry out the orders, who commanded them, what civilian Party leaders supported the actions, and who would be sanctioned following the mêlée. A consequence of factionalism within the PLA is that the Party’s control mechanisms (particularly because rule of law and constitutional restraints on the military are weak) needs to be robust to control not only a single military chain of command but (particularly during crises) perhaps more than one. This is not likely the case. A review of the evidence indicates the military’s influence, on the whole, is increasing, and the Party’s control decreasing.

On one level, the Party clearly controls the military as the Central Military Commission or CMC (the highest military oversight body in the PRC) is chaired by a civilian, President Xi Jinping. Moreover, the PLAs representation on formal political decision-making bodies (such as the Politburo Standing Committee, the Politburo, the Central Committee, and the NPC) has decreased over the years, but this does not necessary equate to a reduced level of influence. For example, the two Vice-Chairman of the CMC are now military generals, as are the remaining other eight members. Irrespective of institutional membership, military leaders retain considerable say. Personal interactions and informal meetings with senior party elites provide venues to sway decisions. They do, also, hold important places on leading small groups dedicated to issues like Taiwan and other security questions, such as the South China Seas.21

In a similar vein, other methods of Party influence, as exercised through political commissars, party committees, and discipline inspection commissions are no longer empowered to enforce the ideological dictates of a paramount leader. In the face of diffuse reporting chains, competing allegiances, and often effective socialization by the military units they are supposed to be watching over, most do not provide the Party guardian and guidance function once so pervasive.

While perhaps overstated, Paltiel’s observation that “…China’s energies over the past century and half have given the military a prominent and even dominant role in the state, preempting civilian control and inhibiting the exercise of constitutional authority” is likely now truer than ever before in history.22 While still loyal to the party as an institution, the PLA is not unconditionally subservient to a particular leader and retains the resources to enter the political arena if (at the highest levels) a decision is made to do so.

The civilian-military trend lines evident in China since the end of the Cultural Revolution affirm that the symbiotic nature of the Party-PLA relationship has morphed in important respects since the late 1960s. The promotion of professionalism, a reduced role for ideological indoctrination, an increasing bifurcation of civil-military elites, and growing state powers (complete with divided loyalties and continued factionalism) has complicated the political landscape informing how the CCP interacts with the PLA. If, as postulated, we have moved from a fused, ‘dual role elite’ model to one of ‘conditional compliance’ in which the military actually holds a preponderance of the power capabilities and where its interests are satisfied through concessions, bargaining, and pay-offs, empirical evidence should reflect this. A review of China’s three major leadership changes since the transition from the revolutionary ‘Old Guard’ to the modern technocrats confirms this.

Formally anointed and legitimized by Deng in 1989, Jiang assumed leadership without military credentials and few allies, viewed by many as a ‘caretaker’ Party Secretary in the wake of the Tiananmen Massacre. Despite his limitations, Jiang was well versed in the vicissitudes of palace politics. Informed by a high political acumen, he immediately promoted an image as an involved Commander-in-Chief, personally visiting all seven military regions, a sign of commitment not made by either the likes of Mao or Deng. Symbolic gestures like this were bolstered by his providing incentives to the PLA, such as: consistent raises in the defence budget; funds for military modernization; as well as equipment, logistics, and augmented R&D.23

Referred to as the ‘silk-wrapped needle,’ Jiang marshalled Party resources to not only reward, but to punish.24 His institutional authority over appointments enabled him to manipulate factions, dismiss those who opposed him, enforce new rigid retirement standards, and promote loyalists. A delicate equilibrium was established during the early-1990s until his semi-retirement in 2004,25 where Jiang guaranteed military priorities such as supporting ‘mechanization’ and an ‘information-based military’ (promoting the concept of RMA with Chinese characteristics) in exchange for the PLA backing of his legacy contributions to Marxist Leninist Mao Zedong thought with the enshrinement of his “Three Represents” doctrine.

Like Jiang, Hu Jintao’s succession was the product of negotiation, compromise, and concessions. While neither opposed by the PLA, nor supported by the military ‘brass,’ Hu was a known commodity, having served as Vice-President (1998) and CMC Vice-Chairman since 1999. He was deemed acceptable until proven otherwise. In the shadow of Jiang (who retained the position of CMC Chair until 2004), Hu did not exert the same kind of influence in, nor engender the same kind of deference from, China’s military, but equally proved capable of fostering a pragmatic relationship with the army which ensured its interests, and in so doing, legitimized his leadership position.

Ceding much of the military planning and operational decisions to the PLA directly, Hu played to his strengths and focused upon national security issues (such as the successful resolution of SARs in China), which bolstered his credibility as a populist leader among the masses, indirectly increasing his power within both the military and the Party. Additionally, he focused upon foreign military security affairs (most notably, North Korea-US negotiations), which enabled him to link his personal political agenda with the military’s latest ambitions.

In according the military a distinct place in China’s national development plan, supporting China’s rise, and ensuring its vital interests, Hu recognized the military’s evolving requirement to ‘go global’ and its worldwide interests in non-combat operations, such as peacekeeping and disaster relief, as well as stakes in the open seas, outer space, and cyberspace as interest frontiers with no geographic boundaries.26 Under the slogan of ‘China’s historical mission in the new phase of the new century’ and his acquiescence to the PLA’s stated requirements ‘to win local wars under modern conditions’ by funding new technology acquisition, Hu received the army’s formal recognition for his contributions to military thought based upon “scientific development” which informed a “strategic guiding theory,” resulting in a new operational orientation for China’s military. Emulating his predecessor, Hu won ‘conditional compliance’ from the PLA by successfully bartering military needs and wants for the army’s support and endorsement of his political tenure. This was not done outside of self-interest. Hu, as did Jiang, skillfully coopted, fired, and promoted select Generals to serve his greater ends, and he did this through varied means. Ultimately, however, it was done in a manner acceptable to the military.

Xi Jinping’s rise to power in 2012, while replicating the ‘horse-trading’ of Jiang and Hu, marks a fundamental departure in leadership style. Often described as a transformative leader, Xi is openly critical of his predecessors and rails against earlier periods where reform stalled and corruption grew.27 An advocate of ‘top-level design,’ incrementalism is being supplanted by a massive attempt to centralize all aspects of the CCP’s power, which includes a major restructuring of the economy, government, administration, and military.

Nicknamed “the gun and the knife” as a slight for his attempts to simultaneously control the army, police, spies, and the ‘graft busters,’ Xi’s power appears uncontested at present. Nevertheless, he is also viewed as ‘pushing the envelope too far’ and endangering the equilibrium which has been established between the Party and PLA over the past 25 years. For example, only two years into his mandate, he fostered a Cult of Personality, “the Spirit of Xi Jinping” which was officially elevated to the same standing as that of Mao and Deng, by comparison, foundational figures in Chinese history. His open attacks of political ‘enemies’ (most notably Zhou Yongkang, a Politburo Standing Committee member and former security czar) breeds fear among almost every senior official, all of whom are vulnerable on some point. Equally true, an unprecedented anti-corruption campaign is inciting comrades to turn on comrades, not unlike a massive game of prisoner’s dilemma.

Nowhere is the pressure for reform greater than in the PLA. Xi advocates administering the army with strictness and austerity, promoting frugality and obedience. At his direction, “mass-line educational campaigns” designed to “rectify work style” through criticism and self-criticism are being implemented.28 Ideological and political building is now equated with army building, as a means of ensuring the Party’s uncontested grip over the troops ideologically, politically, and organizationally. Select military regions (those opposite Taiwan and adjacent to the South China Seas) and commanders from those regions are witnessing favoritism and promotion at the expense of others. Moreover, a new “CMC Chairmanship Responsibility System” has been instituted, which directly calls into question the support of some of Xi’s senior-most generals.

A ‘hardliner’ by nature, Xi recognizes that he must earn the support of the PLA. New military priorities he supports include: accelerating modernization; Joint Command and C4ISR; training; talent management, as well as equipment and force modernization. That said, his goal of achieving the Chinese dream of building a “wealthy, powerful, democratic, civilized, and harmonious socialist modernized nation” by 2021, the 100th anniversary of the founding of the CCP, is exceptionally ambitious. It will require endless commitments to competing interests in a period of economic stagnation and global economic downturn. Should the PLA come to believe they are not first in line for government largess, support for Xi could erode very quickly.29

#### CCP instability collapses the international order – extinction

Perkinson 12 [(Jessica, MA in international affairs from American University) “The Potential for Instability in the PRC: How the Doomsday Theory Misses the Mark,” American University School of International Service, 2012] JL

Should the CCP undergo some sort of dramatic transformation – whether that be significant reform or complete collapse, as some radical China scholars predict2 – the implications for international and US national security are vast. Not only does China and the stability of the CCP play a significant role in the maintenance of peace in the East Asian region, but China is also relied upon by many members of the international community for foreign direct investment, economic stability and trade. China plays a key role in maintaining stability on the Korean Peninsula as one of North Korea’s only allies, and it is argued that instability within the Chinese government could also lead to instability in the already sensitive military and political situation across the Taiwan Strait. For the United States, the effect of instability within the CCP would be widespread and dramatic. As the United States’ largest holder of US treasury securities, instability or collapse of the CCP could threaten the stability of the already volatile economic situation in the US. In addition, China is the largest trading partner of a number of countries, including the US, and the US is reliant upon its market of inexpensive goods to feed demand within the US.

It is with this in mind that China scholars within the United States and around the world should be studying this phenomenon, because the potential for reform, instability or even collapse of the CCP is of critical importance to the stability of the international order as a whole. For the United States specifically, the potential - or lack thereof - forreform of the CCP should dictate its foreign policy toward China. If the body of knowledge on the stability of the Chinese government reveals that the Chinese market is not a stable one, it is in the best interests of the United States to look for investors and trade markets elsewhere to lessen its serious dependence on China for its economic stability, particularly in a time of such uncertain economic conditions within the US.

#### Independently, Xi will lash out to preserve cred in the SCS – US draw-in ensures extinction

Mastro 20 [(Oriana Skylar, Assistant Professor of Security Studies at Georgetown University's Edmund A. Walsh School of Foreign Service, Resident Scholar at the American Enterprise Institute) “Military Confrontation in the South China Sea,” Council on Foreign Relations, 5/21/2020] JL

The risk of a military confrontation in the South China Sea involving the United States and China could rise significantly in the next eighteen months, particularly if their relationship continues to deteriorate as a result of ongoing trade frictions and recriminations over the novel coronavirus pandemic. Since 2009, China has advanced its territorial claims in this region through a variety of tactics—such as reclaiming land, militarizing islands it controls, and using legal arguments and diplomatic influence—without triggering a serious confrontation with the United States or causing a regional backlash. Most recently, China announced the creation of two new municipal districts that govern the Paracel and Spratly Islands, an attempt to strengthen its claims in the South China Sea by projecting an image of administrative control. It would be wrong to assume that China is satisfied with the gains it has made or that it would refrain from using more aggressive tactics in the future. Plausible changes to China’s domestic situation or to the international environment could create incentives for China’s leadership to adopt a more provocative strategy in the South China Sea that would increase the risk of a military confrontation.

The United States has a strong interest in preventing China from asserting control over the South China Sea. Maintaining free and open access to this waterway is not only important for economic reasons, but also to uphold the global norm of freedom of navigation. The United States is also at risk of being drawn into a military conflict with China in this region as a result of U.S. defense treaty obligations to at least one of the claimants to the contested territory, the Philippines. China’s ability to control this waterway would be a significant step toward displacing the United States from the Indo-Pacific region, expanding its economic influence, and generally reordering the region in its favor. Preventing China from doing so is the central objective of the U.S. National Security Strategy and the reason the Indo-Pacific is the U.S. military’s main theater of operations. For these reasons, the United States should seek ways to prevent Chinese expansion, ideally while avoiding a dangerous confrontation and being prepared to deftly manage any crises should they arise.

China considers the majority of the South China Sea to be an inalienable part of its territory. Exercising full sovereignty over this area is a core component of President Xi Jinping’s “China Dream.” China does not accept or respect the sovereignty claims of Brunei, Indonesia, Malaysia, the Philippines, Taiwan, or Vietnam in this region. Although China has been cautious in pressing its claims thus far, three developments could convince Xi that China should be more assertive.

Xi could feel compelled to accelerate his timeline in the South China Sea to maintain his consolidated position within the Chinese Communist Party (CCP), particularly if the political situation in Hong Kong worsens, peaceful reunification with Taiwan becomes less likely, or domestic criticism of his management of the novel coronavirus outbreak increases. With China’s economic growth for 2020 projected to hit only 1.2 percent—the lowest since the mid-1970s—Xi could find it necessary to demonstrate strength while Beijing deals with internal fallout from the pandemic. China has already declared two new administrative districts in the South China Sea in April 2020 and has escalated its criticism of U.S. freedom of navigation operations (FONOPs) in the area. Moreover, with expectations that the first stage of China’s military modernization efforts will be completed in 2020, Xi could become more confident that China would succeed in pressing its claims militarily, especially if the United States is distracted internally with managing the coronavirus pandemic or its aftermath.

#### They get theory but it’s not DTD- 1ar time advantage- that was above, abuse is self-imposed b/c they could always better develop the shell in the 1ar, over-punishment- reading theory cancels out the abuse, and no reason short speech means drop the debater- just get more efficient, short shells already force 2n split. Evaluate the theory debate after the 2NR – if the aff didn’t include weighing in the 1AR, that’s their fault B] dropping the argument minimizes the chance the round is decided unfairly C] if intervention will happen on theory debates, then judges should intervene in a way that decreases the asinine nature of LD theory

## 1NC

#### Plan: The appropriation of outer space for the Search for Extraterrestrial Intelligence by private entities is unjust for all nations except the United States. In the United States, the fifty state territories and respective state and subnational legislative bodies should prohibit the unjust appropriation of outer space for the Search for Extraterrestrial Intelligence by private entities.

#### It’s competitive – they made the active choice to say “national legislation” in their solvency evidence, and they defended this in cross-ex

#### Here’s all the time their card says “NATIONAL”

Gertz 16 [(John, the president and CEO of Zorro Productions, Inc., which he founded in 1977.) “POST-DETECTION SETI PROTOCOLS & METI: THE TIME HAS COME TO REGULATE THEM BOTH,” JBIS, 2016. <https://arxiv.org/pdf/1701.08422.pdf>] RR

**National** legislative bodies could pass laws against METI, explicitly citing it as a violation of the Space Treaty, and explicitly enumerating criminal penalties. No other action could be stronger than this. In the United States, a METI-ist’s only recourse would be a court ruling, overturning the legislation, presumably on free speech grounds.

Such legislation might also specify that the fact of a detection can be made public by the scientists who made it, but the coordinates and content should go only to the President of the U.S., who, with his national security team, can determine from there whether and what information to release to the public. The advantage of national laws over international treaties is that criminal penalties are normally administered at the national level. So even in the presence of treaties, national laws can act as an enforcement buttress.

5.7 FCC, NSF and NASA Regulations Against METI

Relevant agencies of the Federal government, even in the absence of international agreements, can adopt rules proscribing METI and limiting unintentional METI along the lines already suggested. The FCC could ban METI transmissions; NSF could prevent facilities managed by it, such as Arecibo, to be used for the purposes of METI. NASA’s Office for Planetary Protection could also weigh in. This office has the authority to quarantine sample return missions so that they do not inadvertently contaminate our planet with unknown biohazards from outer space. It also oversees NASA’s efforts to avoid contamination of Solar System bodies by our landing craft. Clearly this office has an interest in the potential harm to planet Earth that METI might cause.

#### Plan text in a vacuum bad for fairness because it allows for incongruency between 99% of the aff and 1% of the aff – the worst version of their model is that the plan text is different from the advantage, so it makes no sense – hold them to reading a plan text defined contextually with the advantage

#### That definitely means Congress

Vocabulary ND — (Vocabulary, “Legislature“, Available Online at https://www.vocabulary.com/dictionary/legislature, accessed 1-29-2022, HKR-AR)

The word legislature comes from the Latin word for "law" — legis. In the US, each state has a legislature — made up of the elected state senators and assemblymen or women, or representatives. The US Congress is the national legislature. These bodies, whose members are often referred to as "law-makers," make up the legislative branch of government, as distinct from the executive and judicial branches.

#### BBB passes now – Biden remarks give it momentum

**Frazin 1/23** – Staff Writer for The Hill (Rachel, “ Biden comments add momentum to spending bill's climate measures,” *The Hill*, 1-23-22, <https://thehill.com/policy/healthcare/590871-biden-comments-add-momentum-to-spending-bills-climate-measures>)

President Biden’s remarks at a Wednesday press conference are giving momentum to the climate portions of his spending agenda as lawmakers call for Congress to pass the parts of the Build Back Better legislation that are achievable. Biden expressed confidence that lawmakers can pass **upward of $500 billion in energy and environmental spending** — a number close to the amount the White House proposed spending on climate and clean energy in October. And after months of negotiations, weary lawmakers are now pushing to get climate action across the finish line. “The climate and clean energy provisions in Build Back Better have been largely worked through and financed, so let’s start there and add any of the other important provisions to support working families that can meet the 50-vote threshold,” Sen. Ed Markey (D-Mass.) said in a statement. Markey is far from alone. Sen. Tina Smith (D-Minn.), who has been a vocal proponent of the legislation’s climate change measures, expressed a similar sentiment in an interview with The Hill. “We need to figure out what we have agreement on and we need to do that,” Smith said. “Based on where we have been and comments that Sen. Manchin has made about the climate provisions that we have been negotiating up until the end of last year, it seems like **those sections of the old Build Back Better bill should be in pretty good shape,**” she added. Manchin is the West Virginia Democrat who stopped the Build Back Better bill in its tracks when he announced his opposition in December. Democrats need all of their 50 caucus members to back the legislation for it to get to Biden’s desk. Manchin has **expressed support for the environmental provisions**, but moving ahead would mean cuts to other programs, including an expanded child tax credit, to win his vote. But Smith said it’s important to be practical and get as much as possible out of the negotiations. “I’m a progressive in the caucus but I’m also practical, and I think this is the practical, commonsense way of moving forward to accomplish the best that we can,” she said. Democrats in Congress have historically failed to move major climate change legislation forward and have suffered from high-profile failures like the Obama-era Waxman-Markey bill. Democrats have limited options for getting this type of spending across, give the budgetary rules that allow them to avoid a filibuster that would allow the GOP to block their measure. It’s unlikely that 10 Republicans would join Democrats on many of their climate provisions. The New York Times recently asked all 50 Republicans if they would support the climate provisions as a standalone and **none of them said that they would.** Senate Finance Committee Chairman Ron Wyden (D-Ore.) told reporters Thursday that he saw Biden’s latest remarks as **establishing a way forward** for some provisions like climate. “What the president did last night, and he and I talked about this a number of times, is he created a path for a handful of provisions where we've got a lot of strong support, and it starts with climate. It starts with health care,” he said. Biden, during his Wednesday press conference said, “I think we can break the package up,” “Get as much as we can now and fight for the rest later,” he added. The president also said that he believes Democrats can pass more than $500 billion in energy and environment spending, a figure close to the White House’s proposed $555 billion of climate and clean energy spending from October. Manchin earlier this month said that climate is an area “we probably can come to an agreement much easier than anything else” and **specifically touted clean energy tax credits.**

#### Large President-led national space policies incite immense partisan backlash that spills over to kill the entire political agenda

Dreier 16 [Casey Dreier, Chief Advocate & Senior Space Policy Adviser for The Planetary Society, April 13, 2016. “Does Presidential Intervention Undermine Consensus for NASA?” https://www.planetary.org/blogs/casey-dreier/2016/0413-does-a-strong-president-help-or-hurt-consensus-on-NASA.html]

To see how this happens, I recommend reading the book “[Beyond Ideology](http://smile.amazon.com/Beyond-Ideology-Politics-Principles-Partisanship/dp/0226470768/ref=smi_www_rco2_go_smi_g2243582042?_encoding=UTF8&*Version*=1&*entries*=0&ie=UTF8)” by Frances Lee. The author’s larger premise is that issues having no intrinsic relation to stated party ideology have become increasingly polarized in recent years. This is a function of the two party nature of our political system. If your party coalition wins, the other one loses. It’s [It is] zero-sum. Your party can win in one of two ways: you can make a better pitch to voters by demonstrating the superiority of your agenda; or you can undermine and stymie the agenda of the opposition party, making them unpopular with voters, and pick up the seats that they lose. Since you’re the only other political party, you gain in either scenario. I’m not sure if you’ve noticed, but the “undermine and stymie” approach has been popular for quite some time now in the U.S. Congress. Given this situation, the President and their policies naturally become the symbolic target of the opposition party. Anything promoted by the President effectively induces opposition by association. Lee demonstrates the magnitude of this induced polarization on various types of issues. For highly polarized issues like the role of government in the economy, or social issues, the impact is minimal—the opposition has already been clearly defined and generally falls into clearly defined ideologies of the Republican and Democratic parties. But for issues that do not fit readily into a predefined political ideology—like space—the induced polarization by the President can be significant. In fact, Lee showed that space, science, and technology issues incur the greatest increase in partisanship based on their inclusion in the Presidential agenda. One need only look to at the responses by political operatives of the opposing party to the strong human spaceflight proposals by [Barack Obama in 2010](http://www.shelby.senate.gov/public/index.cfm/mobile/newsreleases?ID=25F3AD2E-802A-23AD-4960-F512B9E205D2), [George W. Bush in 2004](http://www.nbcnews.com/id/3950099/ns/technology_and_science-space/t/bush-sets-new-course-moon-beyond/#.Vw3UMRMrKHo), and [George H.W. Bush in 1989](http://www.nytimes.com/1989/07/21/us/president-calls-for-mars-mission-and-a-moon-base.html) to see this reflected in recent history. This isn’t to say that Presidents can’t have a significant impact on the space program. Clearly they can. But the broad consensus needed for stability after their departure from office may be undermined by the very priority they gave it during their tenure. It what amounts to a mixed blessing for NASA, the U.S. space program does have an unusually strong bipartisan group of politicians who support the program due to NASA centers in a variety of states throughout the union. Berger notes this throughout his article, and it does, in a way, act as force that is resistant to change for good and bad. This mitigates somewhat the pure polarization seen on other science and technology issues. But for a Journey to Mars—a major effort that would, at best, require stability and significant funding over many Presidential administrations—that may not be enough. Perhaps the solution is for the next President to maintain a light touch on space. Maybe they should speak softly through the budget process, and avoid the Kennedyesque speeches and declarations to Congress that induce the types of partisanship we so dearly need to avoid.

#### Republicans want private space exploration

Jeff Foust 16 [PhD Planetary Sciences, Senior Staff Writer @ SpaceNews], "Republican platform endorses commercial space partnerships," SpaceNews, 7-19-2016 <https://spacenews.com/republican-platform-endorses-commercial-space-partnerships/> C.VC

WASHINGTON — The new platform of the Republican Party includes language supporting the use of public-private partnerships to develop space capabilities, an approach that has been used by administrations of both major political parties.

The platform, formally approved by delegates at the Republican party convention July 18 in Cleveland, also features language supporting “unfettered access” to space and increasing the number of scientific missions.

The 54-page document includes two paragraphs about space in a section about technology policy nearly one page long. One paragraph focuses on the use of public-private partnerships.

“The public-private partnerships between NASA, the Department of Defense, and commercial companies have given us technological progress that has reduced the cost of accessing space and extended America’s space leadership in the commercial, civil, and national security spheres,” it states. “The entrepreneurship and innovation culture of the free market is revitalizing the nation’s space capabilities, saving taxpayer money, and advancing technology critical to maintain America’s edge in space and in other fields.”

The platform doesn’t give specific examples of those partnerships, but NASA has made significant use of them under both the current and previous presidential administrations. NASA started the Commercial Orbital Transportation Services (COTS) program in 2005 to develop spacecraft to transport cargo to the International Space Station. COTS was run as a public-private partnership through the use of funded Space Act Agreements, with companies expected to supplement the NASA funds with their own to support vehicle development.

COTS led to the development of SpaceX’s Falcon 9 rocket and Dragon spacecraft, and Orbital Sciences Corp.’s Antares rocket and Cygnus spacecraft. Both companies won Commercial Resupply Services contracts from NASA to transport cargo to and from the ISS in December 2008, a month before the end of the presidency of George W. Bush.

Under the Obama Administration, NASA adopted a similar approach for commercial crew systems, awarding a series of funded Space Act Agreements to several companies to support vehicle and other technology capabilities. NASA ultimately gave contracts in September 2014 to Boeing and SpaceX for their CST-100 Starliner and Crew Dragon spacecraft.

The following paragraph of the platform offered more general policy guidance for civil and national security space. “To protect our national security interests and foster innovation and competitiveness, we must sustain our preeminence in space by launching more scientific missions, guaranteeing unfettered access, and ensuring that our space-related industries remain a source of scientific leadership and education,” it states.

#### BBB climate provisions k2 methane emissions and leak detection

**Casten 1/21** - a member of the House of Representatives, representing the Sixth District of Illinois (Sean, “To Fully Mitigate Climate Change, We Need to Curb Methane Emissions,” *Scientific American*, 1-21-22, <https://www.scientificamerican.com/article/to-fully-mitigate-climate-change-we-need-to-curb-methane-emissions/>)

To Fully Mitigate Climate Change, We Need to Curb Methane Emissions It’s been more than two months since the House of Representatives passed the Build Back Better Act—a bill that would make desperately needed and decades-overdue strides toward the U.S. meeting its moral responsibility to combat the climate crisis. But instead of moving into a new year on the hope that would come with the Senate passing and President Biden signing this historic legislation into law, I’m terrified—and furious—that **we’re tripping at the finish line.** Ahead of COP26, the United Nations climate change conference in November, President Joe Biden committed the U.S. to reducing our greenhouse gas emissions by half by 2030. Having run for Congress on a climate platform after spending two decades combating climate change in the private sector, I know that reducing our greenhouse gas emissions is what’s right for our environment—and for our wallets. If we want to have a shot at meeting that goal, we must find a way to implement the provisions in the House version of the Build Back Better Act that science tells us will reduce emissions quickly, cheaply and most dramatically. One of the most critical and expedient moves we can make is to reduce methane emissions. Methane is a rapidly accelerating part of the climate problem. It is the primary component of natural gas, and it warms the planet more than 80 times as quickly as a comparable volume of atmospheric CO2 over a comparable amount of time. On the one hand, while burning natural gas produces about half the CO2 emissions as burning coal, methane leaking into the atmosphere **more than eliminates those environmental benefits.** Moreover, methane pollution, which is a primary component of ground-level ozone and emitted alongside toxic chemicals such as benzene, has been linked to heart disease, birth defects, asthma and other adverse health impacts. These affect frontline and fenceline communities, the majority of whom are people of color, the hardest. Eliminating those leaks is perhaps the biggest “bang for the buck” action we can take, and the Build Back Better legislation has built within it a program that pairs grants to natural gas companies to help monitor and reduce methane pollution at oil and gas operations with fines on companies who instead break the rules. The program ties into the Global Methane Pledge that President Biden created at COP26. More than 100 countries signed on to a 30 percent reduction of methane levels by 2030. Reducing methane pollution could also reduce adverse health for those in the immediate vicinity of polluters. To meet this goal, we can use existing technology to monitor for and prevent leaks at oil and gas drilling, production, and transmission sites, and prohibit routine venting and flaring of methane gas. This one set of actions would get us most of the way to that goal and is exactly why the Build Back Better Act is so critical. President Biden understands we have a golden opportunity at a critical moment. His administration has already taken a number of important executive actions to eliminate methane emissions at the source: on the same day he and climate envoy John Kerry announced the Global Methane Pledge, the Environmental Protection Agency and the Departments of the Interior and Transportation rolled out new or strengthened rules to tackle methane emissions from oil and gas operations, landfills, pipelines and agriculture. But we can’t get there on executive action alone. While eliminating methane emissions is essential to our fight against climate change building the leak monitoring system that Build Back Better currently calls for would create tens of thousands of jobs in the manufacturing and service sectors and spur hundreds of billions in economic growth.

**Methane emissions lock in irreversible warming**

**Howarth 14** [Robert Howarth, PhD, Director, Agriculture, Energy & Environment Program, Chair, International SCOPE Biofuels Program, David R. Atkinson Professor of Ecology and Environmental Biology – Cornell, “A bridge to nowhere: methane emissions and the greenhouse gas footprint of natural gas,” Energy Science & Engineering, Volume 2, Issue 2, June, 2014]

The GWP of Methane While methane is far more **effective** as a greenhouse gas than carbon dioxide, methane has an atmospheric lifetime of only 12 years or so, while carbon dioxide has an effective influence on atmospheric chemistry for a century or longer [34]. The time frame over which we compare the two gases is therefore **critical**, with methane becoming relatively less important than carbon dioxide as the timescale increases. Of the major papers on methane and the GHG for conventional natural gas published before our analysis for shale gas, one modeled the relative radiative forcing by methane compared to carbon dioxide continuously over a 100-year time period following emission [2], and two used the global warming approach (GWP) which compares how much larger the integrated global warming from a given mass of methane is over a specified period of time compared to the same mass of carbon dioxide. Of the two that used the GWP approach, one showed both 20-year and 100-year GWP analyses [3] while another used only a 100-year GWP time frame [4]. Both used GWP values from the Intergovernmental Panel on Climate Change (IPCC) synthesis report from 1996 [35], the **most reliable estimates** at the time their papers were published. In subsequent reports from the IPCC in 2007 [36] and 2013 [34] and in a paper in Science by workers at the NASA Goddard Space Institute [37], these GWP values have been **substantially increased**, in part, to account for the **indirect effects** of methane on other **radiatively active substances** in the atmosphere such as ozone (Table 2). In Howarth et al. [8], we used the GWP approach and closely followed the work of Lelieveld and colleagues [3] in presenting both integrated 20 and 100 year periods, and in giving equal credence and interpretation to both timescales. We upgraded the approach by using the most recently published values for GWP at that time [37]. These more recent GWP values **increased** the relative warming of methane compared to carbon dioxide by 1.9-fold for the 20-year time period (GWP of 105 vs. 56) and by 1.6-fold for the 100-year time period (GWP of 33 vs. 21; Table 2). Our conclusion was that for the 20-year time period, **shale gas had a larger GHG than coal or oil** even at our low-end estimates for methane emission (Fig. 1); conventional gas also had a larger GHG than coal or oil at our mean or high-end methane emission estimates, but not at the very low-end range for methane emission (the best-case, low-emission scenario). At the 100-year timescale, the influence of methane was much diminished, yet at our high-end methane emissions, the GHG of both shale gas and conventional gas still exceeded that of coal and oil (Fig. 1). Of nine new reports on methane and natural gas published in 9 months after our April 2011 paper [8], six only considered the 100-year time frame for GWP, two used both a 20- and 100-year time frame, and one used a continuous modeling of radiative forcing over the 0–100 time period (Table 2). Of the six papers that only examined the 100-year time frame, all used the **lower GWP value of** 25 from the 2007 IPCC report rather than the higher value of 33 published by Shindell and colleagues in 2009 that we had used; this higher value better accounts for the indirect effects of methane on global warming. Many of these six papers implied that the IPCC dictated a focus on the 100-year time period, **which is simply not the case**: the IPCC report from 2007 [36] presented both 20- and 100-year GWP values for methane. And two of these six papers criticized our inclusion of the 20-year time period as inappropriate [14, 17]. I strongly disagree with this criticism. In the time since April 2011 I have come increasingly to believe that it is essential to consider the role of methane on timescales that are **much shorter than 100 years**, in part, due to **new science on methane** and global warming presented since then [34, 41, 42], briefly summarized below. The **most recent synthesis** report from the IPCC in 2013 on the physical science basis of global warming highlights the **role of methane** in global warming at **multiple timescales**, using GWP values for 10 years in addition to 20 and 100 years (GWP of 108, 86, and 34, respectively) in their analysis [34]. The report states that “there is no scientific argument for selecting 100 years compared with other choices,” and that “the choice of time horizon …. depends on the relative weight assigned to the effects at different times” [34]. The IPCC further concludes that at the 10-year timescale, the current global release of methane from all anthropogenic sources **exceeds** (slightly) **all anthropogenic carbon dioxide emissions** as agents of global warming; that is, **methane emissions are more important** (slightly) **than carbon dioxide** emissions for driving the **current rate** of global warming. At the 20-year timescale, total global emissions of methane are equivalent to over 80% of global carbon dioxide emissions. And at the 100-year timescale, current global methane emissions are equivalent to slightly less than 30% of carbon dioxide emissions [34] (Fig. 3). This difference in the time sensitivity of the climate system to methane and carbon dioxide **is critical**, and **not widely appreciated** by the policy community and even some climate scientists. While some note how the long-term momentum of the climate system is driven by carbon dioxide [15], the climate system is **far more immediately responsive** to changes in methane (and other short-lived radiatively active materials in the atmosphere, such as black carbon) [41]. The model published in 2012 by Shindell and colleagues [41] and adopted by the United Nations [42] predicts that unless emissions of methane and black carbon are reduced **immediately**, the Earth's average surface temperature will warm by 1.5°C by about 2030 and by 2.0°C by 2045 to 2050 **whether or not carbon dioxide emissions are reduced**. Reducing methane and black carbon emissions, even if carbon dioxide is not controlled, **would significantly slow the rate of global warming and postpone reaching the 1.5°C and 2.0°C marks by 15–20 years**. Controlling carbon dioxide as well as methane and black carbon emissions further slows the rate of global warming after 2045, through at least 2070 [41, 42] (Fig. 4). Why should we care about this warming over the next few decades? At temperatures of 1.5–2.0°C above the 1890–1910 baseline, the risk of a fundamental change in the Earth's climate system becomes **much greater** [41-43], possibly leading to **runaway feedbacks** and **even more global warming**. Such a result **would dwarf any possible benefit from reductions in carbon dioxide emissions** over the next few decades (e.g., switching from coal to natural gas, which does reduce carbon dioxide but also increases methane emissions). One of many mechanisms for such catastrophic change is the melting of methane clathrates in the oceans or melting of permafrost in the Arctic. Hansen and his colleagues [43, 44] have suggested that warming of the Earth by 1.8°C may trigger a large and rapid increase in the release of such methane. While there is a wide range in both the magnitude and timing of projected carbon release from thawing permafrost and melting clathrates in the literature [45], warming consistently leads to greater release. This release can in turn cause a feedback of accelerated global warming [46]. To state the converse of the argument: the influence of today's emissions on global warming 200 or 300 years into the future will largely reflect carbon dioxide, and not methane, unless the emissions of methane lead to tipping points and a fundamental change in the climate system. **And that could happen as early as within the next two to three decades.** An **increasing body of science** is developing **rapidly that emphasizes** the need to consider methane's influence over the decadal timescale, and the need to reduce methane emissions. Unfortunately, some recent guidance for life cycle assessments specify only the 100-year time frame [47, 48], and the EPA in 2014 still uses the GWP values from the IPCC 1996 assessment and only considers the 100-year time period when assessing methane emissions [49]. In doing so, they underestimate the global warming significance of methane by 1.6-fold compared to more recent values for the 100-year time frame and by four to fivefold compared to the 10- to 20-year time frames [34, 37].

#### Extinction

Sprat 19 [David Spratt is a Research Director for Breakthrough National Centre for Climate Restoration, Melbourne, and co-author of Climate Code Red: The case for emergency action, and Ian T. Dunlop is a member of the Club of Rome, formerly an international oil, gas and coal industry executive, chairman of the Australian Coal Association, chief executive of the Australian Institute of Company Directors, and chair of the Australian Greenhouse Office Experts Group on Emissions Trading, “Existential climate-related security risk: A scenario approach,” BT Policy Paper, September 5, May 2019-2020, <https://docs.wixstatic.com/ugd/148cb0_90dc2a2637f348edae45943a88da04d4.pdf>]

By 2050, there is broad scientific acceptance that system **tipping-points** for the West Antarctic Ice Sheet and a sea-ice-free Arctic summer were passed well before 1.5°Cof warming, for the Greenland Ice Sheet well before 2°C, and for widespread **permafrost loss and large-scale Amazon drought** and dieback by 2.5°C. The “hothouse Earth” scenario has been realised, and Earth is headed for another degree or more of warming, especially since human greenhouse emissions are still significant.20 While sea levels have risen 0.5 metres by 2050, the increase may be 2–3 metres by 2100, and it is understood from historical analogues that seas may eventually rise by more than 25 metres. Thirty-five percent of the global land area, and 55 percent of the **global population**, are **subject to** more than 20 days a year of **lethal heat conditions**, beyond the threshold of human survivability. The destabilisation of the Jet Stream has very significantly affected the intensity and geographical distribution of the Asian and West African monsoons and, together with the further slowing of the Gulf Stream, is impinging on life support systems in Europe. North America suffers from **devastating weather extremes** including wildfires, heatwaves, drought and inundation. The summer monsoons in China have failed, and water flows into the great rivers of Asia are severely reduced by the loss of more than one-third of the Himalayan ice sheet. **Glacial loss reaches 70 percent** in the Andes, and rainfall in Mexico and central America falls by half. Semi-permanent El Nino conditions prevail. Aridification emerges over more than 30 percent of the world’s land surface. **Desertification is severe** in southern Africa, the southern Mediterranean, west Asia, the Middle East, inland Australia and across the south-western United States. Impacts: **A number of ecosystems collapse**, including coral reef systems, the Amazon rainforest and in the Arctic. Some poorer nations and regions, which lack capacity to provide artificially-cooled environments for their populations, become unviable. **Deadly heat conditions persist** for more than 100 days per year in West Africa, tropical South America, the Middle East and South-East Asia, which together with land degradation21 and rising sea levels contributes to perhaps **a billion people being displaced.** Water availability decreases sharply in the most affected regions at lower latitudes (dry tropics and subtropics), affecting about two billion people worldwide. **Agriculture becomes nonviable** in the dry subtropics. Most regions in the world see a significant drop in food production and increasing numbers of extreme weather events, **including heat waves, floods and storms**. Food production is inadequate to feed the global population and **food prices skyrocket**, as a consequence of a one-fifth decline in crop yields, a decline in the nutrition content of food crops, a catastrophic decline in insect populations, desertification, monsoon failure and chronic water shortages, and conditions too hot for human habitation in significant food-growing regions. The lower reaches of the agriculturally-important river deltas such as the Mekong, Ganges and Nile are inundated, and significant sectors of some of the world’s most populous cities — including Chennai, Mumbai, Jakarta, Guangzhou, Tianjin, Hong Kong, Ho Chi Minh City, Shanghai, Lagos, Bangkok and Manila — are abandoned. Some small islands become uninhabitable. Ten percent of Bangladesh is inundated, displacing 15 million people. According to the Global Challenges Foundation’s Global Catastrophic Risks 2018 report, even for 2°C of warming, more than a billion people may need to be relocated due to sea-level rise, and In high-end scenarios “**the scale of destruction is beyond our capacity to model**, with a high likelihood of human civilisation coming to an end”.22 National security consequences: For pragmatic reasons associated with providing only a sketch of this scenario, we take the conclusion of the ​Age of Consequences ‘Severe’ 3°C scenario developed by a group of senior US national-security figures in 2007 as appropriate for our scenario too: Massive nonlinear events in the global environment give rise to ​massive nonlinear societal events​. In this scenario, nations around the world **will be ​overwhelmed** by the scale of change and pernicious challenges, **such as pandemic disease**. The **internal cohesion** of nations **will be under great stress**, including in the United States, both as a result of a dramatic rise in migration and changes in agricultural patterns and water availability. The **flooding** of coastal communities **around the world**, especially in the Netherlands, the United States, South Asia, and China, has the potential to challenge regional and even national identities.​ **Armed conflict between nations over resources**, such as the Nile and its tributaries, **is likely and nuclear war is possible**. The social consequences range from increased religious fervor to ​outright chaos​. In this scenario, climate change provokes ​a permanent shift in the relationship of humankind to nature​’.23 (emphasis added)

## Case

#### They already sent out all the signals -- nuq

#### Science is localized---believing aliens will develop the same tech is parochial

Basalla 05 – Dr. George Basalla, PhD, Professor of History of Science and Technology at the University of Delaware, “Universal Science”, <https://www.fossilhunters.xyz/intelligent-extraterrestrials/universal-science.html> [Quoting Nicholas Rescher, University Professor of Philosophy and Former Director of the Center for Philosophy of Science at the University of Pittsburgh]

When philosopher Nicholas Rescherwas asked to comment on Drake’s notion of alien science**,** he dismissed it as infinitely parochial**.** It was like saying that extraterrestrials share our legal or political system**.** Rescher was well qualified to examine Drake’s claims. He had recently studied the anthropomorphic character of human science and how it related to alien science. Rescher struck at the heart of the popular conception of alien science when he challenged the widely held view that there is only one natural world and a single science to explain it**.** He called this the one world, one science argument. The physical universe is singular, Rescher agreed, but its interpreters are many and diverse**.** What we know about physical reality stems fromour special biological and cognitive make-up and our unique cultural and social heritage and experiences. We have no reason to suppose that extraterrestrials share our peculiar biological attributes, social outlook, or cultural traditions. Human science, therefore, is incommensurable with extraterrestrial science. If extraterrestrials cultivate science, it will be their kind of science, not our kind. Alien science is a wholly different form of knowledge. It is not human science raised to a higher degree. Rescher offered a compelling illustration of how human biology and our situation on Earth shaped our science. Astronomy as practiced by humans has been molded by the fact that we live on the surface of the Earth (not underwater), that we have eyes, and that the development of agriculture is linked to the seasonal positions of celestial objects. Intelligent alien creatures living in an oceanic abyss might develop sophisticated hydrodynamics but fail to study the motion of heavenly bodies, investigate electromagnetic radiation, or build radio telescopes. Even if extraterrestrials are surface dwellers, their biological endowment will determine what they are able to sense, their ecological niche, what aspects of nature they exploit to satisfy their needs, their cultural heritage, which questions about nature they find interesting to ask**.** Rescher acknowledges the existence of intelligent extraterrestrials who possess the ability to develop science and technology. He does not dispute the scientists’ repeated claims (1) that there is a single scientifically knowable physical reality and (2) that aliens are not simply other humans inhabiting a different planet. After adopting these claims, he demolishes the idea of a universal science that serves as a common language in the universe. Rescher maintains that wherever science exists in the universe, it will be localized**.** It will be the science of the creatures who have fashioned it. They will act according to their special physical constitution, environment, history, and needs. Hence, science diverges in the universe. It does not converge on the theories, concepts, and topics that happen to interest terrestrial researchers at this point in the history of the human intellect.

#### No aliens

Jim **al-Khalili 18**, British theoretical physicist, PhD from the University of Surrey, “Aliens may not exist---but that’s good news for our survival,” https://www.theguardian.com/commentisfree/2018/jun/27/aliens-exist-survival-universe-jim-alkhalili, // SIR

In 1950 Enrico Fermi, an Italian-born American Nobel prize-winning physicist, posed a very simple question with profound implications for one of the most important scientific puzzles: whether or not **life exists beyond Earth**. The story goes that during a lunchtime chat with colleagues at the Los Alamos National Laboratory in New Mexico, the issue of flying saucers came up. The conversation was lighthearted, and it doesn’t appear that any of the scientists at that particular gathering believed in aliens. But Fermi merely wanted to know: “Where is everybody?” The most likely cradles for life inside our solar system Read more His point was that, since the age of the universe is so great and its size so vast, with hundreds of billions of stars in the Milky Way alone, then unless the Earth is astonishingly special, the universe should be teeming with life. This might include intelligent species advanced enough to have the knowledge and technology necessary for space travel. They ought to have colonised the entire galaxy by now. So where are they all? More recently, the late Stephen Hawking argued along similar lines. He said, “To my mathematical brain, the numbers alone make thinking about aliens perfectly rational.” Hawking was articulating the same popular argument as Fermi---that the sheer vastness of the universe all but guarantees we have company. Advertisement In recent years, scientists have begun to take the subject more seriously again. One of the most exciting areas of research in astronomy has been the discovery of extra-solar planets, worlds orbiting stars other than our sun. Many of them even appear to be Earth-like in size and climate. Astronomers now believe there are billions of these other worlds, many of which will have conditions suitable for life. The probability of life, maybe even intelligent life, existing on at least one of them must surely, therefore, be overwhelming. Now however, scientists at the wonderfully named Future of Humanity Institute in Oxford have poured **cold water** on Hawking’s and others’ optimism. They have carried out a thoughtful statistical analysis by **dissecting** a mathematical relation known as **the Drake equation**, which allows us to calculate the probability of extraterrestrial life based on the combined probabilities of all the ingredients for life being in place. Let me make clear at the outset that the Drake equation is not very scientific, for the sole reason that some of the factors that need to be fed into it are pure **guesswork** at this stage. Not the least of these is the big question: given all the things we believe are necessary for life (a source of energy, liquid water and organic molecules), how likely is it that life will emerge? The authors of the new study offer two insights, one pessimistic and the other more cheery. The first is that Fermi’s paradox is **easy** to resolve. The reason we have not had any messages from ET is because, **well,** **there is no ET** **out there**. They calculate the probability we are alone in the universe to be in the range of 39%–85% and the probability that we are alone in our own galaxy to be between 53% and 99.6%. Basically, don’t hold your breath. Biologists, of course, hate all this silly speculation. They quite rightly point out that we still do not properly understand how life originated here on Earth, so how can we possibly have any confidence in anticipating its existence or nonexistence elsewhere? There are some who argue that life on Earth appeared pretty quickly after the right conditions emerged almost 4bn years ago, which was when our planet had cooled sufficiently for liquid water to exist. Doesn’t that mean it could easily appear elsewhere too? Actually, no. A **statistical sample** of one tells us nothing.

It is quite possible that **biology is a freak local aberration**, the product of a chemical fluke so improbable that it **didn’t happen anywhere else** in the **observable universe**. So where do we stand? Well, there are reasons to believe that we may have an answer in the coming decade or two, one way or the other. Astrobiologists are about to search exoplanets for the gases produced by microbial life using sophisticated next-generation space telescopes. There is also the possibility of finding microbial life closer to home, under the ice of several of the moons of Jupiter and Saturn. I did say that the study also provided some cheer. Some have claimed we have not found ET yet because intelligent life (including us) always **annihilates itself** before it can successfully develop the technology for interstellar travel or communication. But maybe the silence is simply because **no such alien civilisations exist**. So, as the authors put it, pessimism about our own future is therefore unfounded. **We may be alone**, but we may just survive.

#### No aliens risk

**Ćirković 19** [Milan M. Ćirković, research professor at the Astronomical Observatory of Belgrade, and a research associate of the Future of Humanity Institute at Oxford University, “Space colonization remains the only long-term option for humanity: A reply to Torres,” 2019, Futures, Vol. 105, pp. 166-173, https://doi.org/10.1016/j.futures.2018.09.006, EA]

Torres’s argument fails to mention the possibility of extraterrestrial life and especially extraterrestrial intelligent life; in this he is quite similar to many other philosophers discussing the future of humanity (e.g., Kahane 2014; Klee 2017). This is important in two different respects. The first is that by relinquishing space colonization, humans obviously leave all available cosmological resources to other intelligent species. (Of course, some of them might be swayed by arguments of extraterrestrial Torres-analogs and relinquish space colonization, but there is no guarantee that all of them will do so, esp. since – as shown above – the arguments are not that persuasive!) This will enable dramatic expansion of an alien colonizing species, which will fill the universe with their own values, entirely different from human/posthuman values. This might or might not be desirable – depending on the character of alien values – but in any case, it would not be particularly appealing from the narrow human perspective. Those averse to s-risks should clearly be against this scenario, since **there are no guarantees** **that** **aliens would not be more efficient than humans in inflicting suffering** **onto themselves and others.**

The second part of the story is harsher. Ironically, if Torres were right that space colonization would always lead to war between diverging factions, the situation would have been hopeless for humanity, sinc**e one or another** **alien** **faction would have found it** **both** **expedient and easy to exterminate or enslave** **the Earth-bound** **humanity.** By the very logic of Torres’s narrative about hyperweapons, **the** **Earth would remain an easy target** **for any interstellar colonizing faction** (and there is no reason to assume that aggressive factions would limit their aggression to their phylogenetic relatives). Thus, Torres’s argument is actually self-defeating in the presence of extraterrestrial intelligence – **acquiescing** **to it** **would directly contribute to** **the ultimate** **harm.**

#### **Impact’s inevitable**

David 20 (Leonard, Leonard David is an award-winning space journalist who has been reporting on space activities for more than 50 years, <https://www.space.com/author/leonard-david> 5/21/20)

Researchers using China's new Five-hundred-meter Aperture Spherical radio Telescope (FAST), the largest single-dish scope in the world, are piecing together a technological strategy to carry out a major and sweeping search for extraterrestrial intelligence (SETI). What if China someday announces that this hunt has been successful? How would such a claim be verified, and what might the consequences be? And could an unofficial international SETI race already be underway? Space.com asked several SETI authorities to flesh out the implications of China being the first nation to get a ping from ET.FAST is a leap forward for Asia's presence in radio astronomy and possibly in SETI. Indeed, the Chinese now can be major players in SETI if the nation chooses to be, said Michael Michaud, author of the book "Contact with Alien Civilizations: Our Hopes and Fears about Encountering Extraterrestrials" (Copernicus/Springer, 2007). "Most scientific fields had been dominated by Americans and other Westerners since the end of World War II. China is now catching up with, and in some areas surpassing, Western achievements," Michaud told Space.com. "Already, China has the resources to become the world's leading nation in several fields of scientific research and technology development." China has a vast reservoir of scientific and engineering talent, Michaud said. The nation also has an authoritarian government that can command resources at will, without facing significant political opposition. Above all is the authority of the Chinese Communist Party, whose leaders dominate decision-making. The FAST telescope would not exist without the Party's approval, he said."The FAST telescope may give China a powerful means of transmitting radio signals that might be detected by an extraterrestrial civilization," Michaud said

**Aliens are mathmatically improbable**

**Al-Khalili**, 6-27-20**18** - Jim Al-Khalili, professor of physics and professor of the public engagement in science at the University of Surrey; "Aliens may not exist – but that’s good news for our survival," Guardian, https://www.theguardian.com/commentisfree/2018/jun/27/aliens-exist-survival-universe-jim-alkhalili

Now however, **scientists at the wonderfully named Future of Humanity Institute in Oxford have poured cold water on Hawking’s and others’ optimism**. They have carried out a thoughtful statistical analysis by dissecting a mathematical relation known as the Drake equation, **which allows us to calculate the probability of extraterrestrial life based on the combined probabilities of all the ingredients for life being in place.**

Let me make clear at the outset that the Drake equation is not very scientific, for the sole reason that some of the factors that need to be fed into it are pure guesswork at this stage. Not the least of these is the big question: given all the things we believe are necessary for life (a source of energy, liquid water and organic molecules), how likely is it that life will emerge?

The authors of the new study offer two insights, one pessimistic and the other more cheery. The first is that **Fermi’s paradox is easy to resolve**. **The reason we have not had any messages from ET is because**, well, **there is no ET out there**. **They calculate the probability we are alone in the universe to be in the range of 39%–85% and the probability that we are alone in our own galaxy to be between 53% and 99.6%.** Basically, don’t hold your breath.

Biologists, of course, hate all this silly speculation. They quite rightly point out that we still do not properly understand how life originated here on Earth, so how can we possibly have any confidence in anticipating its existence or nonexistence elsewhere? There are some who argue that life on Earth appeared pretty quickly after the right conditions emerged almost 4bn years ago, which was when our planet had cooled sufficiently for liquid water to exist. Doesn’t that mean it could easily appear elsewhere too? Actually, no. A statistical sample of one tells us nothing. **It is quite possible that biology is a freak local aberration, t**

**he product of a chemical fluke so improbable that it didn’t happen anywhere else in the observable universe.**

#### No disease- their ship would crash into Earth and release the strain on impact- AND, no impact.

Smith, 17 [Drew Smith, scientist, worked in the biotech and medtech industries for 25 years as a bench scientist, a director of R&D and a CEO, "Would Extraterrestrial Bacteria Be Dangerous To Humans?", 6-16-2017, Forbes, https://www.forbes.com/sites/quora/2017/06/16/would-extraterrestrial-bacteria-be-dangerous-to-humans/, accessed 1-8-2020]

The chance that extraterrestrial bacteria would be deadly to humans is zero. Not just very, very small. Zero.

Pathogenesis requires intimacy. This intimacy is attained through millions of years of co-evolution. The need for intimacy is apparent when you look at how bacteria and viruses cause infections and disease.

Infection requires binding to a cell surface. Bacteria (and viruses) bind to human cells through proteins that recognize human proteins and carbohydrates. The structure of these human proteins and carbohydrates is, to a first approximation, arbitrary. There are an almost infinite number of permutations of them that could exist and work just fine. But only one does exist. The chance that an alien bacteria would have evolved to stick to that protein is infinitesimally small.

Even if this alien bacterium were able to stick to a cell surface, this alone would not establish an infection. Infecting bacteria secrete all kinds of toxins and virulence factors. These toxins and factors bind to specific human proteins. They block or modify their activity in ways that degrade cells and tissues, releasing nutrients that the bacteria can feed upon.

Again, the target proteins have fairly arbitrary structures. They are the result of billions of years of evolutionary history and their precise structure - and even their existence - is not at all predictable. The chance that an alien bacterium would have evolved toxins that precisely target them is infinitesimally small.

Pathogenicity is extremely rare on Earth. There are millions, perhaps billions, of species of bacteria. The number of potential human pathogens among them is very small, no more than a couple hundred. And only a couple dozen are able to infect otherwise healthy humans. These are bacteria that have been with us for millions of years, evolving as we evolve, becoming intimately familiar with our proteins, our cells, our immune systems.

This knowledge is stamped into their genomes; it is a diary of their long association with us. It is not a book that could be written in an alien language. Alien bacteria are no more likely to be human pathogens than intelligent aliens are likely to speak Urdu as their native tongue. It just isn’t possible.

#### Aliens will never find us- dark energy.

Specktor, 18 [Brandon Specktor, senior writer for livescience, "9 Strange, Scientific Excuses for Why Humans Haven't Found Aliens Yet", 7-31-2018, livescience, https://www.livescience.com/63208-alien-life-excuses.html, accessed 1-13-2020]

Dark energy is splitting us apart The universe is expanding. Slowly but surely, galaxies are moving farther apart, with distant stars appearing dimmer to us, all thanks to the pull of a mysterious, invisible substance that scientist call dark energy. Scientists speculate that within a few trillion years, dark energy will stretch the universe so much that Earthlings will no longer be able to see the light of any galaxies beyond our closest cosmic neighbors. That's a scary thought: If we don't explore as much of the universe as possible before then, such investigations may be lost to us forever. "The stars become not only unobservable, but entirely inaccessible," Dan Hooper, an astrophysicist at the Fermi National Accelerator Laboratory in Illinois, wrote in a study earlier this year. That means we're on a serious deadline to find and meet any aliens out there — and to keep a step ahead of dark energy, we'll have to expand our civilization into as many galaxies as we can before they all drift away. Of course, fueling that kind of growth won't be easy, Hooper said. It might involve rearranging the stars.

#### No invasion.

Tedder, 15 [Jim Tedder, reporter @ Voice of America News, "Invasion of Earth Unlikely, Say Researchers", 9-22-2015, VOA, https://learningenglish.voanews.com/a/invasion-of-earth-unlikely-say-researchers/2972922.html, accessed 1-13-2020]

Should we fear an invasion from outer space? Researchers have been searching and listening for life on other planets. They say we should not be concerned about alien beings any time soon. Michael Garrett teaches at the University of Leiden. He is also the General and Scientific Director of the Netherlands Institute for Radio Astronomy. Professor Garrett has been listening for radio signals from other planets, searching for signs of extraterrestrial life. He says advanced civilizations are either rare or do not exist in the areas of outer space he has examined. He adds that natural processes are most likely responsible for any radio signals that have been received on Earth. He says that means “we can all sleep safely in our beds tonight. An alien invasion doesn’t seem at all likely.”

#### No alien war

Sedacca 16 [Matthew Sedacca, science writer for Cosmos, citing Janne Korhonen, interstellar military expert. What Military Theory Tells Us About Future Space Warfare. December 2016. cosmos.nautil.us/short/82/what-military-theory-tells-us-about-future-space-warfare]

Janne Korhonen, an author and economics graduate student at Aalto University in Finland, is one of the world’s handful of interstellar military theorists (yes, these people exist). In 2013 he argued that aliens, even if in possession of vastly superior technologically, are very unlikely to attack us. To begin with, why would they bother? War is typically fought over resources. Almost one century ago, historian John Edwin Bakeless found that 14 of the 20 wars from 1878 to 1918 had economic motivations strongly connected to asserting control of natural resources. The number is even larger when you include wars of colonial conquest, which can be counted as no-contest resource-grabs.

But if aliens are looking for resources, an assault on Earth doesn’t make a whole lot of sense, since the gas giant planets and the asteroid belt offer huge repositories of materials for the taking. Sure, Earth does have the most varied minerals in the solar system because of the action of life and water, but just to get to our solar system would require huge amounts of fuel, making the whole venture rather pointless from a cost-benefit view. Only an alien species that requires our specific minerals (or needs to eat sentient carbon-based organisms) would trouble itself with such a voyage.

Nonetheless, if extraterrestrials did want to pick a fight with us, they would be running a huge risk. Korhonen argued that, unless they were 100-percent sure they could destroy us, they could never be assured of final victory. It is often said that advanced aliens would regard us as mere ants—and anyone who has ants in their house or yard knows they are almost impossible to eradicate. Even a few survivors could quickly multiply to repopulate the planet, while learning from the attacker’s technology and preparing a retaliation. Meanwhile, neighboring civilizations might see the act of aggression and join the battle, if only to protect their own interests. In light of this strategic calculus, aliens would be foolish to invade.

#### Humans are too dispersed and disease trends against lethality

Sebastian Farquhar 17, director at Oxford's Global Priorities Project, Owen Cotton-Barratt, a Lecturer in Mathematics at St Hugh’s College, Oxford, John Halstead, Stefan Schubert, Haydn Belfield, Andrew Snyder-Beattie, "Existential Risk Diplomacy and Governance", GLOBAL PRIORITIES PROJECT 2017, 1/23/2017, https://www.fhi.ox.ac.uk/wp-content/uploads/Existential-Risks-2017-01-23.pdf

1.1.3 Engineered pandemics For most of human history, natural pandemics have posed the greatest risk of mass global fatalities.37 However, there are some reasons to believe that natural pandemics are very unlikely to cause human extinction. Analysis of the International Union for Conservation of Nature (IUCN) red list database has shown that of the 833 recorded plant and animal species extinctions known to have occurred since 1500, less than 4% (31 species) were ascribed to infectious disease.38 None of the mammals and amphibians on this list were globally dispersed, and other factors aside from infectious disease also contributed to their extinction. It therefore seems that our own species, which is very numerous, globally dispersed, and capable of a rational response to problems, is very unlikely to be killed off by a natural pandemic. One underlying explanation for this is that highly lethal pathogens can kill their hosts before they have a chance to spread, so there is a selective pressure for pathogens not to be highly lethal. Therefore, pathogens are likely to co-evolve with their hosts rather than kill all possible hosts.39

#### No runaway tech and it takes forever

Walsh 16 [Toby Walsh is professor of artificial intelligence at the University of New South Wales and the author of, 9/20/17 "Android Dreams: The Past, Present and Future of AI" (Hurst, £16.99) https://www.wired.co.uk/article/elon-musk-artificial-intelligence-scaremongering]

It seems you can’t open a newspaper without Elon Musk predicting that artificial intelligence (AI) needs regulating – before it starts World War III. And if it’s not Elon, its Vladimir telling us AI will rule the world. I’m starting to feel like I’m a very dangerous guy. That’s because I’m a professor of artificial intelligence. There was a time, 20 years back, when people just smiled at me when I told them I was working on building intelligent machines. And I knew that smile was one of sympathy. Back then, AI was simply so hopeless. But now, as AI begins to make some progress, people seem to live in fear of the next thing that will emerge from AI labs across the world. Elon is, in fact, right. AI does need regulating. But he’s also almost surely wrong – AI isn’t going to start World War III anytime soon. Or rule the world. Or end humanity. AI needs regulating because the big tech companies have got too big for their own good. And like every other industry sector before it that has got too big – the banks, the oil companies, the telecom firms – regulation is needed to ensure the public good. To ensure that we all benefit and not just the tech elite. We’re beginning to see the corrosive effects of Facebook’s algorithms on political debate, of Amazon’s dominance of the retail sector, and of Google’s monopoly on search. And it’s hard to know where to begin with a company like Uber. There’s just so much to criticise. However, the problems today are not caused by super smart AI, but stupid AI. We’re letting algorithms make decisions that impact on society. And these algorithms are not very smart. Joshua Brown discovered this to his cost last year when he became the first person killed by his autonomous car. In fact, a smarter car might have seen the truck turning across the road and saved his life. There’s a very seductive and dangerous idea that is getting people like Elon all worked up: the idea of the "technological singularity". At some point, we’ll build machines sufficiently smart that they’ll be able to re-design themselves to be even smarter. And these smarter machines will then re-design themselves again. This will signify a tipping point, when machine intelligence snowballs away. Before we know it, we’ll no longer be the smartest creatures on the planet. And if we’re not careful, these machines will use their superior intelligence to take over the planet. Just as we used our intelligence to take over the planet from the apes, the dolphins and the dinosaurs before us. Now, the first thing you need to know about the singularity is that it is an idea mostly believed by people not working in artificial intelligence. People like the philosopher Nick Bostrom, and the futurist and inventor Ray Kurzweil. Most people working in AI like myself have a healthy skepticism for the idea of the singularity. We know how hard it is to get even a little intelligence into a machine, let alone enough to achieve recursive self-improvement. There are many technical reasons why the singularity might never happen. We might simply run into some fundamental limits. Every other field of science has fundamental limits. You can’t, for example, accelerate past the speed of light. Perhaps there are some fundamental limits to how smart you can be? Or perhaps we run into some engineering limits. Did you know that Moore’s Law is officially dead? Intel is no longer looking to double transistor count every 18 months. But even if we do get to the singularity, machines don’t have any consciousness, any sentience. They have no desires or goals other than the ones that we give them. AlphaGo isn’t going to wake up tomorrow and decide humans are useless at Go, and instead opt to win some money at online poker. And it is certainly not going to wake up and decide to take over the planet. It’s not in its code. All AlphaGo will ever do is maximise one number: its estimate for the probability it will win the current game of Go. Indeed, it doesn’t even know that it is playing Go. So, we don’t have to fear that the machines are going to take over anytime soon. But we do have to worry about the impact even stupid AI is starting to have on our lives. It will widen inequality. It will put some people out of work. It will corrode political debate. Even stupid AI can be used by the military to transform warfare for the worse. So, Elon, stop worrying about World War III and start worrying about what Tesla’s autonomous cars will do to the livelihood of taxi drivers. And don’t just take my word for it. A recent survey of 50 Nobel Laureates ranked the climate, population rise, nuclear war, disease, selfishness, ignorance, terrorism, fundamentalism, and Trump as bigger threats to humanity than AI.