## 1AC – Emory

#### Plan: The appropriation of outer space by private entities in The People's Republic of China is unjust.

#### 1] China’s dependent on private companies for space expansion, satellite deployment, and mining

Fernandez 21 — (Ray Fernandez, Writer at ScreenRant, “Hundreds Chinese Companies Called To Boost Space “, ScreenRant, 11-27-2021, Available Online at https://screenrant.com/chinese-companies-boost-space-development/, accessed 1-11-2022, HKR-AR)

In a new move to boost space development, China has opened up space to private companies. China's space program is heavily linked with the military and wrapped up in secrecy. However, recent Chinese space accomplishments, rovers on the Moon and Mars, new satellites and new space stations were primarily developed by government efforts.

The U.S. brought in the private sector as a strategy to boost its space program and develop expensive and ambitious new projects. Now China is doing the same. The last time China used national private companies to increase development was when it declared Artificial Intelligence a national priority. Fast forward a few years, Chinese AI dominates globally.

At the 7th China (International) Commercial Aerospace Forum, national private companies presented many new and ambitious projects, including spaceplanes, space resources, a massive constellation of satellites and more. One of the companies at the event was the space giant China Aerospace Science and Industry Corp. (CASIC). The Ministry of Science and Technology, China National Space Administration, and other government arms sponsored and supervised the event.

CASIC said that the Xingyun constellation — made up of 80 satellites is moving full speed ahead. The corporation announced that the intelligent space satellite production factory was operating. They are now launching rockets from their own rocket park in the city of Wuhan. Today the rocket park and smart sat factory produce 20 solid-fuel launches and 100 satellites per year but plans to increase capacities are on their way. CASIC is also working on the Tengyun spaceplane, recently flight-testing an advanced turbine-based combined cycle engine in the Gobi desert.

CASIC is not the only private company developing space planes in China. The China Aerospace Science and Technology Corp. and iSpace also presented their plans for space planes and space crafts. iSpace has designed two missions to the Moon, which they assure will be the first commercial missions to the natural satellite. China is getting some **inspiration from U.S. companies**. Local companies in China are looking into space tourism with suborbital and orbital flights. And Deep Blue Aerospace is developing a reusable launcher that looks very much like the Heavy Falcon of SpaceX.

The event's **main themes** were IoT space networks, multi-purpose satellite constellations, **space** resources (mining) and taking the Chinese space sector to a new level with private participation. While the U.S. has its eye on Chinese military space vehicles, it may have overlooked and underestimated the impact that the Chinese private sector will have. Hundreds of new companies have responded to the government's call to "start a new journey for commercial aerospace" in China. It is only a matter of time until their full power and capabilities are unleashed into space.

#### 2] Xi commitments, manufacturing capacity, and FDI make the CCP’s private sector integral to 21st century space competition

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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.

#### 3] Mining basing competition causes war

Jamasmie 21 — (Cecilia Jamasmie, Cecilia has covered mining for more than a decade. She is particularly interested in Corporate Social Responsibility (CSR), Diamonds and Latin America. Cecilia has been interviewed by BBC News and CBC among others and has been a guest speaker at mining conventions, including MINExpo 2016 and the World’s Copper Conference 2018. She is also member of the expert panel on Social License to Operate (SLO) at the European project MIREU (Mining and Metallurgic Regions EU). She holds a Master of Journalism from the University of British Columbia, and is based in Nova Scotia., “Experts warn of brewing space mining war among US, China and Russia“, MINING, 4-29-21, Available Online at https://www.mining.com/experts-warn-of-brewing-space-mining-war-among-us-china-and-russia/, accessed 1-11-2022, HKR-AR)

A brewing war to set a mining base in space is likely to see China and Russia joining forces to keep the US increasing attempts to dominate extra-terrestrial commerce at bay, experts warn.

The Trump Administration took an active interest in space, announcing that America would return astronauts to the moon by 2024 and creating the Space Force as the newest branch of the US military.

It also proposed global legal framework for mining on the moon, called the Artemis Accords, encouraging citizens to mine the Earth’s natural satellite and other celestial bodies with commercial purposes.

The directive classified outer space as a “legally and physically unique domain of human activity” instead of a “global commons,” paving the way for mining the moon without any sort of international treaty.

Spearheaded by the US National Aeronautics and Space Administration (NASA), the Artemis Accords were signed in October by Australia, Canada, England, Japan, Luxembourg, Italy and the United Emirates.

“Unfortunately, the Trump Administration exacerbated a national security threat and risked the economic opportunity it hoped to secure in outer space by failing to engage Russia or China as potential partners,” says Elya Taichman, former legislative director for then-Republican Michelle Lujan Grisham.

“Instead, the Artemis Accords have driven China and Russia toward increased cooperation in space out of fear and necessity,” he writes.

Russia’s space agency Roscosmos was the first to speak up, likening the policy to colonialism.

“There have already been examples in history when one country decided to start seizing territories in its interest — everyone remembers what came of it,” Roscosmos’ deputy general director for international cooperation, Sergey Saveliev, said at the time.

China, which made history in 2019 by becoming the first country to land a probe on the far side of the Moon, chose a different approach. Since the Artemis Accords were first announced, Beijing has approached Russia to jointly build a lunar research base.

President Xi Jinping has also he made sure China planted its flag on the Moon, which happened in December 2020, more than 50 years after the US reached the lunar surface.

#### 4] Russia’s long-term space strategy is contingent on the Chinese private sector

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The Russian and U.S. space industries are the two oldest. They have a lot of space programs, experts, and related intellectual property and have been integrated into the space ecosystem. The Chinese space sector has developed primarily independently from the U.S.-Russia system. There has been some collaboration between China and Europe since the Wolf Amendment, but the absence of any kind of commercial space companies until recently, combined with the sensitivity around the International Traffic in Arms Regulations (a U.S. export-control regime), has forced the Chinese space ecosystem to develop pretty much independently. Russia, though a nation in decline, still likes projects involving space to bolster national pride. As a result, there has been a broader trend over the last five to ten years of a gradual realignment of the Russian space sector toward China in terms of both the government and the industrial base.

**More Russian companies are looking to China to buy products.** Historically these companies have bought material from Europe, but they have recently turned more to China because of how weak the Russian ruble is, making imports more expensive. At the same time, Chinese companies are looking to Russia as an export market as well as to Russia and former Soviet states as investment opportunities. There is synergy, for example, between a Chinese rocket company that sees a relatively cheap Ukrainian rocket company with specific technology that it wants and a Ukrainian company that has all the technology, intellectual property, and “know-how,” but does not have that much money.

The international lunar research station is beneficial to the commercial space sector to the extent that the national team would be occupied with the space station. As the national team gets bigger and takes on more sophisticated projects, this may help free up the kind of lower-end work companies were doing before and create more room for commercial competition.

Moving forward, if there are massive lunar projects and a large Chinese space station, these developments are all things that will occupy a lot of top engineers and SOEs. There will be a need for a bigger commercial sector to contribute to emerging projects and complete the technological development of the more commercial, as opposed to institutional or national-level, projects in the space sector.

What is the relationship between China’s space industry development and its Military-Civil Fusion strategy, and how is this affecting the commercial space sector?

There are two main types of impact: the technological impact and the broader policy impact. As part of the Military-Civil Fusion strategy, the Chinese government wants to develop specific capabilities and emphasize specific technologies, which produce the technological impact. From that perspective, this strategy dictates what the commercial space sector does in terms of R&D, and the technological direction it takes. Zhuhai satellite is an example of this strategy. Since Zhuhai satellite was a spinoff from the Harbin Institute of Technology, which has a military link, there is a possibility that it is pursuing more space technologies that are related to Military-Civil Fusion.

The second type is the broader policy impact. Because the central government makes Military-Civil Fusion a significant policy objective, there will be industrial bases that are built to support related technologies. More money and resources will be available for a startup that will support China’s strategic and tech ambitions. Because of the money and resources that are available, the development of the space industry will change as companies adapt their activities to what the government is emphasizing and to what kind of support they can get from different stakeholders in order to survive.

#### 5] Sino-Russian alliance causes space conflict and nuclear war

Taichman 21 — (Elya Taichman, Elya Taichman is the former legislative director for then-Rep. Michelle Lujan Grisham, where he focused on space, national security, and foreign policy., “Opinion“, POLITICO, 1-29-2021, Available Online at https://www.politico.com/news/2021/01/29/biden-space-diplomacy-russia-china-455963, accessed 1-12-2022, HKR-AR)

Instead, the Artemis Accords have driven China and Russia toward increased cooperation in space out of fear and necessity. China opposes the Artemis Accords, with experts likening the American-led coalition of ten nations to Britain’s colonial Enclosure Movement. Dmitry Rogozin, Chief of Roscosmos, the Russian space agency, compared them to an invasion of the moon and their international coalition to the NATO military alliance.

Moreover, Russia’s space program required increased funding that China could provide in exchange for the Russian expertise it craved. The pair even announced they were considering building a lunar research base together. Nevertheless, it is clear this new friendship will create a destabilizing counter-system in space.

To be fair, there is good reason for the United States to pursue the Artemis Accords without Russia and China. China’s official policy is to become the preeminent space power by 2045. This means a nuclear-powered space fleet, space transport for humans, and mining colonies on the Moon, Mars, and asteroids. President Xi Jinping described the Chinese space program as “part of the dream to make China stronger.” Furthermore, for nearly a decade the annual Commerce, Justice, and Science Appropriations bills included the Wolf Amendment, which has prohibited NASA from cooperating with China to prevent technology theft.

Russia also represents a serious threat in space and the need for a counter-coalition. In November 2019, Russia launched a single satellite that subsequently and unexpectedly “birthed” a twin. In January 2020, the pair floated near KH-11, a multi-billion-dollar U.S. military reconnaissance satellite. After the United States complained, Moscow moved the satellites away from KH-11.

However, on July 15, 2020, the “birthed” satellite launched a missile into outer space. Russia claimed the satellites were non-military, but these “Nesting Doll” satellites demonstrate the dual nature of space technology: that Russia and China can readily turn allegedly benign infrastructure into military weapons to threaten the United States. Thus, although the Artemis Accords govern commercial space activities, assembling a like-minded coalition ready to challenge American foes seems prudent.

The Sino-Russo partnership not only undermines national security, but also risks the very aim of the Artemis Accords: the expansion of space commerce. A competing alliance in space will prevent the Artemis Accords from developing into customary international law that would increase stability.

For example, under the Artemis Accords, nations agree to increase transparency and employ “safety zones” for activities like lunar mining. As nations and corporations compete over the best locations on the moon to extract lunar ice to create rocket fuel, it is important that a single system govern who may operate where. Otherwise, potential conflicts lack peaceful means of resolution.

#### 6] That goes nuclear – space is fragile and offense dominant, so even small incidents escalate

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Why space is a particular problem for crisis stability

For a number of reasons, space poses particular challenges in preventing a crisis from starting or from being managed well. Some of these are to do with the physical nature of space, such as the short timelines and difficulty of attribution inherent in space operations. Some are due to the way space is used, such as the entanglement of strategic and tactical missions and the prevalence of dual-use technologies. Some are due to the history of space, such the absence of a shared understanding of appropriate behaviors and consequences, and a dearth of stabilizing personal and institutional relationships. While some of these have terrestrial equivalents, taken together, they present a special challenge.

The vulnerability of satellites and first strike incentives

Satellites are inherently fragile and difficult to protect; in the language of strategic planners, space is an “offense-dominant” regime. This can lead to a number of pressures to strike first that don‘t exist for other, better-protected domains. Satellites travel on predictable orbits, and many pass repeatedly over all of the earth‘s nations. Low-earth orbiting satellites are reachable by missiles much less capable than those needed to launch satellites into orbit, as well as by directed energy which can interfere with sensors or with communications channels. Because launch mass is at a premium, satellite armor is impractical. Maneuvers on orbit need costly amounts of fuel, which has to be brought along on launch, limiting satellites‘ ability to move away from threats. And so, these very valuable satellites are also inherently vulnerable and may present as attractive targets.

Thus, an actor with substantial dependence on space has an incentive to strike first if hostilities look probable, to ensure these valuable assets are not lost. Even if both (or all) sides in a conflict prefer not to engage in war, this weakness may provide an incentive to approach it closely anyway.

A RAND Corporation monograph commissioned by the Air Force15 described the issue this way:

First-strike stability is a concept that Glenn Kent and David Thaler developed in 1989 to examine the structural dynamics of mutual deterrence between two or more nuclear states.16 It is similar to crisis stability, which Charles Glaser described as ―a measure of the countries‘ incentives not to preempt in a crisis, that is, not to attack first in order to beat the attack of the enemy,‖17 except that it does not delve into the psychological factors present in specific crises. Rather, first strike stability focuses on each side‘s force posture and the balance of capabilities and vulnerabilities that could make a crisis unstable should a confrontation occur.

For example, in the case of the United States, the fact that conventional weapons are so heavily dependent on vulnerable satellites may create incentives for the US to strike first terrestrially in the lead up to a confrontation, before its space-derived advantages are eroded by anti-satellite attacks.18 Indeed, any actor for which satellites or space-based weapons are an important part of its military posture, whether for support missions or on-orbit weapons, will feel “use it or lose it” pressure because of the inherent vulnerability of satellites.

Short timelines and difficulty of attribution

The compressed timelines characteristic of crises combine with these “use it or lose it” pressures to shrink timelines. This dynamic couples dangerously with the inherent difficulty of determining the causes of satellite degradation, whether malicious or from natural causes, in a timely way.

Space is a difficult environment in which to operate. Satellites orbit amidst increasing amounts of debris. A collision with a debris object the size of a marble could be catastrophic for a satellite, but objects of that size cannot be reliably tracked. So a failure due to a collision with a small piece of untracked debris may be left open to other interpretations. Satellite electronics are also subject to high levels of damaging radiation. Because of their remoteness, satellites as a rule cannot be repaired or maintained. While on-board diagnostics and space surveillance can help the user understand what went wrong, it is difficult to have a complete picture on short timescales. Satellite failure on-orbit is a regular occurrence19 (indeed, many satellites are kept in service long past their intended lifetimes).

In the past, when fewer actors had access to satellite-disrupting technologies, satellite failures were usually ascribed to “natural” causes. But increasingly, even during times of peace operators may assume malicious intent. More to the point, in a crisis when the costs of inaction may be perceived to be costly, there is an incentive to choose the worst-case interpretation of events even if the information is incomplete or inconclusive.

Entanglement of strategic and tactical missions

During the Cold War, nuclear and conventional arms were well separated, and escalation pathways were relatively clear. While space-based assets performed critical strategic missions, including early warning of ballistic missile launch and secure communications in a crisis, there was a relatively clear sense that these targets were off limits, as attacks could undermine nuclear deterrence. In the Strategic Arms Limitation Treaty, the US and Soviet Union pledged not to interfere with each other‘s ―national technical means‖ of verifying compliance with the agreement, yet another recognition that attacking strategically important satellites could be destabilizing.20 There was also restraint in building the hardware that could hold these assets at risk.

However, where the lines between strategic satellite missions and other missions are blurred, these norms can be weakened. For example, the satellites that provide early warning of ballistic missile launch are associated with nuclear deterrent posture, but also are critical sensors for missile defenses. Strategic surveillance and missile warning satellites also support efforts to locate and destroy mobile conventional missile launchers. Interfering with an early warning sensor satellite might be intended to dissuade an adversary from using nuclear weapons first by degrading their missile defenses and thus hindering their first-strike posture. However, for a state that uses early warning satellites to enable a “hair trigger” or launch-on-attack posture, the interference with such a satellite might instead be interpreted as a precursor to a nuclear attack. It may accelerate the use of nuclear weapons rather than inhibit it.

Misperception and dual-use technologies

Some space technologies and activities can be used both for relatively benign purposes but also for hostile ones. It may be difficult for an actor to understand the intent behind the development, testing, use, and stockpiling of these technologies, and see threats where there are none. (Or miss a threat until it is too late.) This may start a cycle of action and reaction based on misperception. For example, relatively low-mass satellites can now maneuver autonomously and closely approach other satellites without their cooperation; this may be for peaceful purposes such as satellite maintenance or the building of complex space structures, or for more controversial reasons such as intelligence-gathering or anti-satellite attacks.

Ground-based lasers can be used to dazzle the sensors of an adversary‘s remote sensing satellites, and with sufficient power, they may damage those sensors. The power needed to dazzle a satellite is low, achievable with commercially available lasers coupled to a mirror which can track the satellite. Laser ranging networks use low-powered lasers to track satellites and to monitor precisely the Earth‘s shape and gravitational field, and use similar technologies. 21

Higher-powered lasers coupled with satellite-tracking optics have fewer legitimate uses. Because midcourse missile defense systems are intended to destroy long-range ballistic missile warheads, which travel at speeds and altitudes comparable to those of satellites, such defense systems also have inherent ASAT capabilities. In fact, while the technologies being developed for long-range missile defenses might not prove very effective against ballistic missiles—for example, because of the countermeasure problems associated with midcourse missile defense— they could be far more effective against satellites. This capacity is not just theoretical. In 2007, China demonstrated a direct-ascent anti-satellite capability which could be used both in an ASAT and missile defense role, and in 2009, the United States used a ship-based missile defense interceptor to destroy a satellite, as well. US plans indicated a projected inventory of missile defense interceptors with capability to reach all low earth orbiting satellites in the dozens in the 2020s, and in the hundreds by 2030.22

Discrimination

The consequences of interfering with a satellite may be vastly different depending on who is affected and how, and whether the satellite represents a legitimate military objective.

However, it will not always be clear who the owners and operators of a satellite are, and users of a satellite‘s services may be numerous and not public. Registration of satellites is incomplete23 and current ownership is not necessarily updated in a readily available repository. The identification of a satellite as military or civilian may be deliberately obscured. Or its value as a military asset may change over time; for example, the share of capacity of a commercial satellite used by military customers may wax and wane. A potential adversary‘s satellite may have different or additional missions that are more vital to that adversary than an outsider may perceive. An ASAT attack that creates persistent debris could result in significant collateral damage to a wide range of other actors; unlike terrestrial attacks, these consequences are not limited geographically, and could harm other users unpredictably.

In 2015, the Pentagon‘s annual wargame, or simulated conflict, involving space assets focused on a future regional conflict. The official report out24 warned that it was hard to keep the conflict contained geographically when using anti-satellite weapons:

As the wargame unfolded, a regional crisis quickly escalated, partly because of the interconnectedness of a multi-domain fight involving a capable adversary. The wargame participants emphasized the challenges in containing horizontal escalation once space control capabilities are employed to achieve limited national objectives.

Lack of shared understanding of consequences/proportionality

States have fairly similar understandings of the implications of military actions on the ground, in the air, and at sea, built over decades of experience. The United States and the Soviet Union/Russia have built some shared understanding of each other‘s strategic thinking on nuclear weapons, though this is less true for other states with nuclear weapons. But in the context of nuclear weapons, there is an arguable understanding about the crisis escalation based on the type of weapon (strategic or tactical) and the target (counterforce—against other nuclear targets, or countervalue—against civilian targets).

Because of a lack of experience in hostilities that target space-based capabilities, it is not entirely clear what the proper response to a space activity is and where the escalation thresholds or “red lines” lie. Exacerbating this is the asymmetry in space investments; not all actors will assign the same value to a given target or same escalatory nature to different weapons.

#### 7] NEA scarcity and ilaw ambiguity makes US-China competition go nuclear

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Finally, a lack of coordination increases the risks for lunar crewmembers, once these arrive on the moon. The disruptions of the kind described above should be self-explanatory in their risk to humans attempting to establish a permanent presence. However, more insidious factors also abound. One of these is the lack of standardisation driven by a bifurcation into geopolitical blocs of lunar activity. As has been pointed out, widely adopted standards of lunar exploration promise considerable benefits[16]. A balkanisation of standards would do the opposite, limiting any attempt of future cooperation in exploration and scientific endeavour. In the most extreme cases, it endangers lives. Mutual aid is a core tenet of both the Outer Space Treaty and the Artemis Accords. Yet, a lack of universally accepted technological standards for lunar (and beyond) crewed operations potentially makes such action considerably more difficult. As the ISS has proven, any inter-operational system must be designed from the outset to be inter-operational. For future lunar activities, this presently seems impossible. Though currently remote, the possibility of the loss of life due to conflicting standards of crewed lunar technology is nevertheless a tragedy worth contemplating.

Again, the described issues are most likely to occur should terrestrial geopolitical tensions between the US and China preclude proactive coordination and information sharing. While the establishment of separate lunar operations can, at this point, be taken as a given, it is far from too late to establish functionally sufficient coordination mechanisms to prevent a major international incident. While US-China coordination is limited by the Wolf Amendment, it is not wholly precluded, as indicated by NASA’s monitoring of the Chang’e 4 mission, utilising the Lunar Reconnaissance Orbiter[17], and, more recently, an exchange of data to mitigate the risks of an orbital collision of Mars orbiters[18]. Ideally, therefore, the United States would proactively take the necessary bilateral steps to work with China to coordinate its respective beyond-Earth surface activities and prevent harmful interference.

Alongside, and regardless of, these efforts, it will be the task of members of international bodies, such as The Committee on the Peaceful Uses of Outer Space (COPUOS) to facilitate coordination activities. In the midst of such efforts, ESA member states are primary actors eligible for leading such initiatives, with ESA having engaged in collaborative activities in space with both the US and China. While diplomats active within UN COPUOS will be well aware of these issues, and their role in enabling such necessary coordination, it is incumbent upon national governments allied to the US to recognise these flashpoints and spearhead broader policy responses to proactively support coordination and the activities of their diplomats at the UN. The UK government, whose diplomats already play a major role in coordinating international space activities, must lend them its full support.

Beyond the moon, the issue of geographically concentrated sites of interest is only likely to prevail. While space is boundless, areas of economical or scientific value are nonetheless often concentrated. Some preliminary analysis, for example, places the number of economically viable near-Earth asteroids at around only ten[19], due to the fact that metallic, accessible, and economically viable near-Earth asteroids are comparatively rare in number. Given the considerable geographic challenges associated with on-asteroid operations, the need for multi-actor coordination will only become more pressing, especially if terrestrial US-China competition intensifies.

Failures to Coordinate

The risks outlined above are non-exhaustive, and do not touch upon the military dimension of space which carries equal if not greater weight. However, they demonstrate clearly the fact that US-China coordination in space will become ever more pressing as the exploration and commercialisation of space advances. Such risks will only manifest themselves if the US and China are unable to coordinate their activities sufficiently and allow geopolitical tensions to obstruct this crucial work.

Looking forwards, all third-party actors in space should closely monitor terrestrial US-China relations and map these to their own activities relating to space (be this in the realm of space exploration or applications), taking mitigating measures as necessary should tensions spill over beyond Earth. In tandem, states with notable diplomatic influence should increase further efforts to enable frictionless coordination and information sharing between the two great powers. Crucially, should formal coordination mechanisms in orbit, on the moon, or beyond be in sight, imperfect coordination should be prioritised if institutional gridlock driven by the pursuit of national interest is the alternative.

#### 8] The drive for more power is the best explanation for every facet of international relations and state behavior

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One of the ironies of contemporary U.S. thinking about foreign policy is the odd status of realism. On the one hand, realist theory remains a staple of college teaching on international relations (along with many other approaches), and government officials [often claim](https://www.washingtonexaminer.com/hr-mcmaster-trump-national-security-strategy-to-be-based-on-principled-realism) that their actions are based on some sort of “realist” approach. But Washington remains for the most part a realism-free zone, with few genuine realists in positions of influence. Moreover, the realist perspective is almost entirely absent from the commanding heights of U.S. punditry. This column, and the consistently insightful writings of people such as Paul Pillar or Jacob Heilbrunn, does not make up for realism’s exclusion from the New York Times, Washington Post, or Wall Street Journal. Instead of relying on realism, both Republicans and Democrats tend to view foreign policy through the lens of liberal idealism. Rather than see world politics as an arena where security is scarce and major powers are forced to contend whether they wish to or not, America’s foreign-policy mavens are quick to divide the world into virtuous allies (usually democracies) and evil adversaries (always some sort of dictatorship) and to assume that when things go badly, it is because a wicked foreign leader (Saddam Hussein, Ali Khamenei, Vladimir Putin, Muammar al-Qaddafi, etc.) is greedy, aggressive, or irrational. When friendly states object to something the (virtuous) United States is doing, U.S. leaders tend to assume that critics just don’t understand their noble aims or are jealous of America’s success. I’ll concede that the Trump presidency presents a particular challenge for realists. It’s not easy to reconcile Donald Trump’s incoherent and bumbling approach to foreign affairs with the idea that states pursue national interests in a more or less rational or strategic fashion. Trump has shown himself to be many things thus far — willful, vain, dishonest, impulsive, narcissistic, ignorant, etc. — but “rational” and “strategic” aren’t words that leap to mind when contemplating his foreign policy. Realism also emphasizes external factors, such as balances of power and geography, and downplays the role of individual leaders. But the Trump presidency is an eloquent and worrisome reminder of the damage that individual leaders can do and especially when they are convinced that they are “[the only one that matters](https://www.npr.org/sections/thetwo-way/2017/11/03/561797675/im-the-only-one-that-matters-trump-says-of-state-dept-job-vacancies).” Nonetheless, Trump’s singular incompetence isn’t sufficient reason to toss realism aside completely. For one thing, realism still helps us understand how Trump can get away with all this meshugas: The United States is still so powerful and secure that it can do a lot of dumb things and suffer only modest losses. More importantly, realism remains an extremely useful guide to a lot of things that have happened in the recent past or that are happening today. And as Trump is proving weekly, leaders who ignore these insights inevitably make lots of dumb mistakes. In short, it is still highly useful to think like a realist. Let me explain why. Realism has a long history and many variants, but its core rests on a straightforward set of ideas. As the name implies, realism tries to explain world politics as they really are, rather than describe how they ought to be. For realists, power is the centerpiece of political life: Although other factors sometimes play a role, the key to understanding politics lies in focusing on who has power and what they are doing with it. The Athenians’ infamous warning to the Melians captures this perfectly: “The strong do what they can, and the weak suffer what they must.” [Quentin Tarantino](https://www.youtube.com/watch?v=R8u8ahInQY8) couldn’t have put it any better. For realists, states are the key actors in the international system. There is no central authority that can protect states from one another, so each state must rely upon its own resources and strategies to survive. Security is a perennial concern — even for powerful states — and states tend to worry a lot about who is weaker or stronger and what power trends appear to be. Cooperation is far from impossible in such a world — indeed, at times cooperating with others is essential to survival — but it is always somewhat fragile. Realists maintain that states will react to threats first by trying to “[pass the buck](https://en.wikipedia.org/wiki/Offensive_realism#Balancing_v._buck-passing)” (i.e., getting someone else to deal with the emerging danger), and if that fails, they will try to [balance](https://en.wikipedia.org/wiki/Balance_of_threat) against the threat, either by seeking allies or by building up their own capabilities. Realism isn’t the only way to think about international affairs, of course, and there are a number of [alternative perspectives and theories](https://www.jstor.org/stable/1149275) that can help us understand different aspects of the modern world. But if you do **think like a realist** — at least part of the time — many confusing aspects of world politics become easier to understand. If you think like a realist, for example, you’ll understand why China’s rise is a critical event and likely to be a source of conflict with the United States (and others). In a world where states have to protect themselves, the two most powerful states will eye each other warily and compete to make sure that they don’t fall behind or become dangerously vulnerable to the other. Even when war is avoided, intense security competition is likely to result. And by the way, thinking like a realist helps you understand why China is no longer committed to Deng Xiaoping’s policy of “peaceful rise.” That approach made sense when China was weaker, and it fooled plenty of Westerners into thinking China could be inveigled into being a responsible stakeholder that would meekly embrace various institutions and arrangements created by others back when China was weak. But realists understand that a more powerful China would eventually want to modify any features that were not in China’s interest, as Beijing has begun to do in recent years. Bottom line: Thinking like a realist is essential if you want to understand Sino-American relations. If you think like a realist, you wouldn’t be surprised that the United States has repeatedly used military force in distant lands over the past 25 years and especially after 9/11. Why? For one simple reason: Nobody could prevent it. Americans were also convinced their global role was indispensable and that they had the right, the responsibility, and the wisdom to interfere all over the world. But America’s dominant position was the permissive condition that made this overweening ambition seem feasible, at least for a while. As Kenneth Waltz [warned](https://www.jstor.org/stable/2539097?seq=1#page_scan_tab_contents) way back in 1993: “One may hope that America’s internal preoccupations will produce not an isolationist policy, which has become impossible, but a forbearance that will give other countries at long last the chance to deal with their own problems and make their own mistakes. But I would not bet on it.” Good realist that he was, Waltz [understood](http://www.columbia.edu/itc/sipa/U6800/readings-sm/Waltz_Structural%20Realism.pdf) that the “vice to which great powers easily succumb in a multipolar world is inattention; in a bipolar world, overreaction; in a unipolar world, overextension.” And that’s precisely what happened. If you think like a realist, the crisis in Ukraine looks rather different than the typical Western version of events. Western accounts typically blame Putin for most of the trouble, but realists understand that major powers are always sensitive about their borders and are likely to react defensively if other great powers start encroaching on these regions. Ever heard of the Monroe Doctrine? In the case of Ukraine, the United States and its European allies had been expanding NATO steadily eastward ([violating pledges](https://nsarchive.gwu.edu/briefing-book/russia-programs/2017-12-12/nato-expansion-what-gorbachev-heard-western-leaders-early) made to Soviet leaders when Germany reunified) and ignoring repeated warnings from Moscow. By 2013, the United States and European Union were making a concerted effort to pull Ukraine into closer alignment with the West and openly interfering in Ukraine’s domestic political processes. Because the Obama administration did not think like realists, however, it was blindsided when Putin seized Crimea and derailed the EU/U.S. effort. Putin’s response was neither legal nor legitimate nor admirable, but it wasn’t surprising either. It is equally unsurprising that these events alarmed the Europeans and prompted NATO to shore up its defenses in Eastern Europe, precisely as a realist would expect. Thinking like a realist can also help you understand why the EU is in trouble. The entire EU project was designed to transcend nationalism and subordinate state interests within broader supranational institutions. Its architects hoped the separate national identities and interests that had torn Europe apart repeatedly would fade over time and a broad pan-European identity would supplant them. European unity was facilitated by the Cold War because the Soviet threat gave Western Europe ample incentive to cooperate, gave the Soviets’ Eastern European satellites an ideal to aspire to, and kept the “[American pacifier](https://www.jstor.org/stable/1148355)” on the continent. But once the Cold War was over, nationalism returned with a vengeance and especially after the euro crisis hit. Suddenly, populations wanted their elected officials not to save Europe but to save them. Despite herculean efforts by a number of European leaders and EU officials, these centrifugal tendencies seem to be getting worse, as the Brexit decision, the recent elections in Italy, and the resurgent nationalism in Poland and Hungary all attest. Those who hoped that European integration would prove irreversible have trouble understanding how their noble experiment went awry, but realists don’t. If you think like a realist, you might not be quite so outraged by the support that Iran and Syria gave the anti-American insurgency in Iraq after 2003. You might not like it, but you wouldn’t find their conduct surprising. Their response was classic balance of power behavior because the United States had just overthrown Saddam Hussein and the Bush administration had made it clear that Syria and Iran were next on its hit list. It made good strategic sense for Damascus and Tehran to do whatever they could to keep the United States bogged down in Iraq so that Washington couldn’t reload the shotgun and come after them. Americans have every reason to be upset by what these states did, but if more U.S. officials thought like realists, they would have expected it from the get-go. And if you think like a realist, it is obvious why North Korea has gone to enormous lengths to acquire a nuclear deterrent and obvious why a country such as Iran was interested in becoming a latent nuclear weapons state as well. These states were deeply at odds with the world’s most powerful country, and prominent U.S. officials kept saying that the only solution was to topple these regimes and replace them with leaders more to their liking. Never mind that regime change [rarely works](https://foreignpolicy.com/2018/05/14/regime-change-for-dummies/) as intended; the more important point is that any government facing a threat like that is going to try to protect itself. Nuclear weapons [aren’t good for blackmail](https://www.amazon.com/Nuclear-Weapons-Coercive-Diplomacy-Sechser/dp/1107514517) or conquest, but they are a very effective way to deter more powerful states from trying to overthrow you with military force. And you’d think Americans would understand this, given that the U.S. government thinks it needs thousands of nuclear weapons in order to be secure, despite its favorable geographic position and overwhelming conventional superiority. If U.S. leaders think like that, is it any wonder that some weaker and more vulnerable powers conclude that having a few nukes might make them more secure? And is it so surprising that they might be reluctant to give them up in exchange for assurances or promises that might easily be reversed or withdrawn? Someone really should explain this logic to John Bolton. Thinking like a realist also helps you understand why states with radically different political systems often act in surprisingly similar ways. To take an obvious example, the United States and Soviet Union could not have been more different in terms of their domestic orders, but their international behavior was much the same. Each led vast alliance networks, toppled governments they didn’t like, assassinated a number of foreign leaders, built tens of thousand of nuclear weapons (deployed on missiles, bombers, and submarines), intervened in far-flung lands, tried to convert other societies to their preferred ideology, and did what they could to bring the other down without blowing up the world. Why did they behave in such similar fashion? Because in an anarchic world, each had little choice but to compete with the other, lest it fall behind and become vulnerable to the other’s predations. Last but not least, if you think like a realist, you’re likely to be skeptical about the ambitious schemes that idealists keep dreaming up to bring an end to conflict, injustice, inequality, and other bad things. Striving to build a safer and more peaceful world is admirable, but realism reminds us that the ambitious efforts to remake world politics always create unintended consequences and rarely deliver the promised results. It also reminds that even allies fear unchecked power and will have misgivings whenever the United States tries to run the world. If you think like a realist, in short, you are more likely to act with a degree of prudence, and you’ll be less likely to see opponents as purely evil (or see one’s own country as wholly virtuous) and less likely to embark on open-ended moral crusades. Ironically, if more people thought like realists, the prospects for peace would go up.

#### 9] China space commercialization uniquely risks cascades – they ignore norms and don’t register satellites which prevents tracking

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Of the 3,000-odd operational satellites currently in orbit, a little over 400 belong to China or Chinese companies. The number of commercial companies in the West launching satellites has skyrocketed in recent years, and SpaceX now operates more satellites than any other company or government.

But refusing to be left behind, China is planning both state and commercial deployments of constellation satellites in huge numbers in the coming years, which could post an increased risk to in-orbit operations if Chinese companies don’t take due care in how they behave.

The new commercial space race

A report by the Secure World Foundation says a 2014 document from the Chinese Government known as “Document 60” (Official English Language Title: Guiding Opinions of the State Council on Innovating the Investment and Financing Mechanisms in Key Areas and Encouraging Social Investment) was the start of China’s modern commercial space sector. And in 2020, satellite Internet was included in the scope of China’s New Infrastructure policy initiative. Space is also part of China’s expansive Belt and Road initiative, which all combined have led to an explosion in the country’s commercial space ambitions.

China is beginning to “get its act together” around commercial use of space, Jonathan McDowell of the Harvard-Smithsonian Center for Astrophysics tells DCD. Whereas in previous years he says China has had many government satellites and some quasi-commercial satellites with strong ties to government, but now there are true commercial Chinese companies in space.

“We have the same phenomenon as the US companies in that they're moving fast and they're innovative and doing new things.”

But as Chinese companies look to follow the likes of SpaceX and OneWeb in deploying large numbers of satellites, he warns their lack of care in operations could potentially damage space for everyone.

China’s commercial space industry blasts off

A number of private space companies including LinkSpace, OneSpace, iSpace, LandSpace, and ExPace, have all launched in recent years. As well developing their own rockets, these companies are launching satellites of all shapes and sizes into Low Earth Orbit (LEO) with the aim of forming their own constellations to rival those of Western companies.

Bao Weimin, member of the National Committee of the Chinese People’s Political Consultative Conference and director of the Science and Technology Committee of the Aerospace Science and Technology Group, recently announced plans to establish a national satellite network company to be responsible for “coordinating the planning and operation of space satellite Internet network construction.”

The China Aerospace Science and Industry Corporation (CASIC), a state-owned enterprise, outlined its plans to preliminarily finish the construction of the Xingyun project, an 80-satellite LEO narrowband Internet of Things constellation, by 2025 in addition to 320 Hongyan communications satellites.

China Telecom’s satellite communications reportedly has plans to launch 10,000 satellites in the next five to ten years under the name ‘China StarNet’. Spacety is also launching a constellation of imagery satellites and has launched at least 20 so far. Another company called GW has filed for spectrum allocation from the International Telecommunication Union for two broadband constellations called GW-A59 and GW-2 that would include almost 13,000 satellites.

A report from IDA into China’s commercial space industry found others including Zhuhai Orbita, GalaxySpace, MinoSpace, LaserFleet, Head Aerospace and numerous others are also developing constellations from which, like US counterparts, these companies aim to provide satellite broadband, 5G, IoT, and various data services. Though many are in the early stages of development, most plan to launch the first of what could be hundreds or even thousands of satellites within the next few years.

While most companies can’t boast the same level of funding as US space companies – VC funding for Chinese space companies was up to $516 million in 2018 compared to the $2.2 billion US companies raised – they are bringing in investment; earlier this year Beijing Commsat received more than $4.5 billion in funding from the China Internet Investment fund, with more than $10 billion in additional funding promised in the future.

Xie Tao, founder of Beijing Commsat Technology Development Co., Ltd, told China Money Network he expects the country to launch 30,000 to 40,000 Satellites in the future, compared to 40,000 to 60,000 launched by the US.

“Space in the orbit is allocated on a first-come, first-served basis and the onus will be on these latecomers to ensure their satellites will not collide with existing ones,” Commsat’s Xie previously said. “The low-Earth orbit is becoming increasingly crowded and the space land grab is on.”

China isn’t up to speed in orbital norms

While the UN tightly controls GEO orbits, offering countries licenses for a set number of slots in the closely-packed and highly valuable planes, there is no such limit at lower orbits. The number of satellites that companies can launch at LEO is limited only by what local regulators will permit, despite the machines circling the entire planet in around 90 minutes.

And space is becoming increasingly crowded. The number of satellites being launched annually is beginning to reach the thousands, leftovers parts from previous launches and satellites can mount up if not properly disposed of, and debris from previous in-orbit incidents means LEO is full of thousands of pieces of potentially satellite-destroying junk and debris.

Around 28,200 pieces of space junk and debris are currently being tracked in orbit but ESA estimates there could be up to hundreds of thousands of potentially harmful pieces in orbit. At its most extreme, Kessler syndrome predicts a scenario where the space around Earth is so full of satellites and debris that it becomes unmanageable and collisions begin to cascade, causing a chain reaction of collisions which render many orbits out of use for generations.

China has as much right to operate satellites as Western companies, but the current lack of adherence to ‘space norms’ could increase risks further. McDowell warns the ‘explosion’ of Chinese activity could have a massive impact on the usability of space.

“Chinese adherence to things like space debris norms and registration norms is, I would say, about 10 years behind everybody else, if not more” he says. “In UN registration of satellites, they're being very incomplete. They're not registering a lot of their CubeSats and things like that. They're not really being as careful, and they're not as transparent in what's going on.”

Chinese commercial satellites are subject the same risks as Western ones in space; extreme temperatures, crowded operating environment, and new companies seeing large numbers of failures as they go through rapid development. But a lack of proper registration can create more risk of collisions, which can have catastrophic effects, especially with larger satellites at higher orbits.

#### 10] debris cascades – early warning is an independent impact as well

Blatt 20 [Talia, joint concentration in Social Studies and Integrative Biology at Harvard, specialization in East Asian geopolitics and security issues] “Anti-Satellite Weapons and the Emerging Space Arms Race,” Harvard International Review, May 26, 2020, <https://hir.harvard.edu/anti-satellite-weapons-and-the-emerging-space-arms-race/> TG

Despite their deterrent functions, ASATs are more likely to provoke or exacerbate conflicts than dampen them, especially given the risk they [pose](https://thebulletin.org/2019/06/arms-control-in-outer-space-the-russian-angle-and-a-possible-way-forward/) to early warning satellites. These satellites are a crucial element of US ballistic missile defense, capable of [detecting missiles](https://www.globalsecurity.org/space/world/japan/warning.htm) immediately after launch and tracking their paths.

Suppose a US early warning satellite goes dark, or is shut down. Going dark could signal a glitch, but in a world in which other countries have ASATs, it could also signal the beginning of an attack. Without early warning satellites, the United States is much more susceptible to nuclear missiles. Given the strategy of counterforcing—[targeting](https://www.belfercenter.org/sites/default/files/files/publication/isec_a_00273_LieberPress.pdf) nuclear silos rather than populous cities to prevent a nuclear counterattack—the Americans might believe their nuclear weapons are imminently at risk. It could be [twelve hours](https://books.google.com/books?id=ET8lDwAAQBAJ&pg=PA1&lpg=PA1&dq=%22Protecting+Space+Assets%22+johnson-freese&source=bl&ots=6Oq0IdeBjw&sig=ACfU3U1G6Hj8QdP4JlCRNxA6i5XplZwHyg&hl=en&sa=X&ved=2ahUKEwj1n-jT2YzpAhUugnIEHUuMCu4Q6AEwA3oECAkQAQ#v=onepage&q=%22Protecting%20Space%20Assets%22%20johnson-freese&f=false) before the United States regains satellite function, which is too long to wait to put together a nuclear counterattack. The United States, therefore, might move to mobilize a nuclear attack against Russia or China over what might just be a piece of debris shutting off a satellite.

Additionally, accidental warfare, or strategic miscalculation, is uniquely likely in space. It is [much easier](https://books.google.com/books?id=VyXTDwAAQBAJ&pg=PA339&lpg=PA339&dq=space+offense+dominant&source=bl&ots=Mw0bgJ51qf&sig=ACfU3U3DeZiEHpr9nfszlCbJZIoyyssIpg&hl=en&sa=X&ved=2ahUKEwjrs-WD3IzpAhVulHIEHbL0AE4Q6AEwCXoECAoQAQ#v=onepage&q=space%20offense%20dominant&f=false) to hold an adversary’s space systems in jeopardy with destructive ASATs than it is to [sustainably defend](https://www.cnas.org/publications/commentary/the-us-military-should-not-be-doubling-down-on-space) a system, which is expensive and in some cases not technologically feasible because of limitations on satellite movement. Space is therefore [considered](https://books.google.com/books?id=VyXTDwAAQBAJ&pg=PA339&lpg=PA339&dq=space+offense+dominant&source=bl&ots=Mw0bgJ51qf&sig=ACfU3U3DeZiEHpr9nfszlCbJZIoyyssIpg&hl=en&sa=X&ved=2ahUKEwjrs-WD3IzpAhVulHIEHbL0AE4Q6AEwCXoECAoQAQ#v=onepage&q=space%20offense%20dominant&f=false) offense-dominant; offensive tactics like weapons development are prioritized over defensive measures, such as [improving GPS](https://www.politico.com/story/2018/04/06/outer-space-war-defense-russia-china-463067) or making satellites more resistant to jamming.

As a result, countries are left with poorly defended space systems and rely on offensive posturing, which increases the risk that their actions are perceived as aggressive and incentivizes rapid, risky counterattacks because militaries cannot rely on their spaced-based systems after first strikes.

There are several hotspots in which ASATs and offensive-dominant systems are particularly relevant. Early warning satellites [play](https://www.politico.com/story/2018/04/06/outer-space-war-defense-russia-china-463067) a central role in US readiness in the event of a conflict involving North Korea. News of North Korean missile launches comes from these satellites. Given North Korea’s [history](https://www.bbc.com/news/world-asia-pacific-11813699) of nuclear provocations, unflinchingly hostile rhetoric towards the United States and South Korea, and diplomatic opacity, North Korea is always a threatening, unknowable adversary, but recent developments have magnified the risk. With the health of Kim Jong-un [potentially in jeopardy](https://apnews.com/f5d302ae65b03838173e40848223b771), a succession battle or even civil war on the peninsula [raises the chances](https://www.express.co.uk/news/world/1273890/Kim-Jong-un-dead-North-Korea-nuclear-weapon-news-latest-death-US) of loose nukes. If the regime is terminal, traditional MAD risk calculus will become moot; with nothing to lose, North Korea would have no reason to hold back its nuclear arsenal. Or China [might decide](https://foreignpolicy.com/2020/04/28/kim-jong-un-china-north-korea/) to seize military assets and infrastructure of the regime. If the US does not have its early warning satellites because they have been taken out in an ASAT attack, the US, South Korea, and Japan are all in imminent nuclear peril, while China could be in a position to fundamentally reshape East Asian geopolitics.

The South China Sea is another hotspot in which ASATs could risk escalation. China [is developing](https://missiledefenseadvocacy.org/missile-threat-and-proliferation/todays-missile-threat/china-anti-access-area-denial-coming-soon/) Anti-Access Area Denial (A2/AD) in the South China Sea, a combination of long range radar with air and maritime defense meant to deny US freedom of navigation in the region. Given the disputed nature of territory in the South China Sea, the United States and its allies do not want China to successfully close off the region.

### Framing

#### the standard is maximizing expected wellbeing

#### Independently:

#### 1] Biological death matters

Burns 2017 (Elizabeth Finneron-Burns is a Teaching Fellow at the University of Warwick and an Affiliated Researcher at the Institute for Futures Studies in Stockholm, What’s wrong with human extinction?, <http://www.tandfonline.com/doi/pdf/10.1080/00455091.2016.1278150?needAccess=true>, Canadian Journal of Philosophy, 2017)

Many, though certainly not all, people might believe that it would be wrong to bring about the end of the human species, and the reasons given for this belief are various. I begin by considering four reasons that could be given against the moral permissibility of human extinction. I will argue that only those reasons that impact the people who exist at the time that the extinction or the knowledge of the upcoming extinction occurs, can explain its wrongness. I use this conclusion to then consider in which cases human extinction would be morally permissible or impermissible, arguing that there is only a small class of cases in which it would not be wrong to cause the extinction of the human race or allow it to happen. 2.1. It would prevent the existence of very many happy people One reason of human extinction might be considered to be wrong lies in the value of human life itself. The thought here might be that it is a good thing for people to exist and enjoy happy lives and extinction would deprive more people of enjoying this good. The ‘good’ in this case could be understood in at least two ways. According to the first, one might believe that you benefit a person by bringing them into existence, or at least, that it is good for that person that they come to exist. The second view might hold that if humans were to go extinct, the utility foregone by the billions (or more) of people who could have lived but will now never get that opportunity, renders allowing human extinction to take place an incidence of wrongdoing. An example of this view can be found in two quotes from an Effective Altruism blog post by Peter Singer, Nick Beckstead and Matt Wage: One very bad thing about human extinction would be that billions of people would likely die painful deaths. But in our view, this is by far not the worst thing about human extinction. The worst thing about human extinction is that there would be no future generations. Since there could be so many generations in our future, the value of all those generations together greatly exceeds the value of the current generation. (Beckstead, Singer, and Wage 2013) The authors are making two claims. The first is that there is value in human life and also something valuable about creating future people which gives us a reason to do so; furthermore, it would be a very bad thing if we did not do so. The second is that, not only would it be a bad thing for there to be no future people, but it would actually be the worst thing about extinction. Since happy human lives have value, and the number of potential people who could ever exist is far greater than the number of people who exist at any one time, even if the extinction were brought about through the painful deaths of currently existing people, the former’s loss would be greater than the latter’s. Both claims are assuming that there is an intrinsic value in the existence of potential human life. The second claim makes the further assumption that the forgone value of the potential lives that could be lived is greater than the disvalue that would be accrued by people existing at the time of the extinction through suffering from painful and/or premature deaths. The best-known author of the post, Peter Singer is a prominent utilitarian, so it is not surprising that he would lament the potential lack of future human lives per se. However, it is not just utilitarians who share this view, even if implicitly. Indeed, other philosophers also seem to imply that they share the intuition that there is just something wrong with causing or failing to prevent the extinction of the human species such that we prevent more ‘people’ from having the ‘opportunity to exist’. Stephen Gardiner (2009) and Martin O’Neill (personal correspondence), both sympathetic to contract theory, for example, also find it intuitive that we should want more generations to have the opportunity to exist, assuming that they have worth-living lives, and I find it plausible to think that many other people (philosophers and non-philosophers alike) probably share this intuition. When we talk about future lives being ‘prevented’, we are saying that a possible person or a set of possible people who could potentially have existed will now never actually come to exist. To say that it is wrong to prevent people from existing could either mean that a possible person could reasonably reject a principle that permitted us not to create them, or that the foregone value of their lives provides a reason for rejecting any principle that permits extinction. To make the first claim we would have to argue that a possible person could reasonably reject any principle that prevented their existence on the grounds that it prevented them in particular from existing. However, this is implausible for two reasons. First, we can only wrong someone who did, does or will actually exist because wronging involves failing to take a person’s interests into account. When considering the permissibility of a principle allowing us not to create Person X, we cannot take X’s interest in being created into account because X will not exist if we follow the principle. By considering the standpoint of a person in our deliberations we consider the burdens they will have to bear as a result of the principle. In this case, there is no one who will bear any burdens since if the principle is followed (that is, if we do not create X), X will not exist to bear any burdens. So, only people who do/will actually exist can bear the brunt of a principle, and therefore occupy a standpoint that is owed justification. Second, existence is not an interest at all and a possible person is not disadvantaged by not being caused to exist. Rather than being an interest, it is a necessary requirement in order to have interests. Rivka Weinberg describes it as ‘neutral’ because causing a person to exist is to create a subject who can have interests; existence is not an interest itself.3 In order to be disadvantaged, there must be some detrimental effect on your interests. However, without existence, a person does not have any interests so they cannot be disadvantaged by being kept out of existence. But, as Weinberg points out, ‘never having interests itself could not be contrary to people’s interests since without interest bearers, there can be no ‘they’ for it to be bad for’ (Weinberg 2008, 13). So, a principle that results in some possible people never becoming actual does not impose any costs on those ‘people’ because nobody is disadvantaged by not coming into existence.4 It therefore seems that it cannot be wrong to fail to bring particular people into existence. This would mean that no one acts wrongly when they fail to create another person. Writ large, it would also not be wrong if everybody decided to exercise their prerogative not to create new people and potentially, by consequence, allow human extinction. One might respond here by saying that although it may be permissible for one person to fail to create a new person, it is not permissible if everyone chooses to do so because human lives have value and allowing human extinction would be to forgo a huge amount of value in the world. This takes us to the second way of understanding the potential wrongness of preventing people from existing — the foregone value of a life provides a reason for rejecting any principle that prevents it. One possible reply to this claim turns on the fact that many philosophers acknowledge that the only, or at least the best, way to think about the value of (individual or groups of) possible people’s lives is in impersonal terms (Parfit 1984; Reiman 2007; McMahan 2009). Jeff McMahan, for example, writes ‘at the time of one’s choice there is no one who exists or will exist independently of that choice for whose sake one could be acting in causing him or her to exist … it seems therefore that any reason to cause or not to cause an individual to exist … is best considered an impersonal rather than individual-affecting reason’ (McMahan 2009, 52). Another reply along similar lines would be to appeal to the value that is lost or at least foregone when we fail to bring into existence a next (or several next) generations of people with worth-living lives. Since ex hypothesi worth-living lives have positive value, it is better to create more such lives and worse to create fewer. Human extinction by definition is the creation of no future lives and would ‘deprive’ billions of ‘people’ of the opportunity to live worth-living lives. This might reduce the amount of value in the world at the time of the extinction (by killing already existing people), but it would also prevent a much vaster amount of value in the future (by failing to create more people). Both replies depend on the impersonal value of human life. However, recall that in contractualism impersonal values are not on their own grounds for reasonably rejecting principles. Scanlon himself says that although we have a strong reason not to destroy existing human lives, this reason ‘does not flow from the thought that it is a good thing for there to be more human life rather than less’ (104). In contractualism, something cannot be wrong unless there is an impact on a person. Thus, neither the impersonal value of creating a particular person nor the impersonal value of human life writ large could on its own provide a reason for rejecting a principle permitting human extinction. It seems therefore that the fact that extinction would deprive future people of the opportunity to live worth-living lives (either by failing to create either particular future people or future people in general) cannot provide us with a reason to consider human extinction to be wrong. Although the lost value of these ‘lives’ itself cannot be the reason explaining the wrongness of extinction, it is possible the knowledge of this loss might create a personal reason for some existing people. I will consider this possibility later on in section (d). But first I move to the second reason human extinction might be wrong per se. 2.2. It would mean the loss of the only known form of intelligent life and all civilization and intellectual progress would be lost A second reason we might think it would be wrong to cause human extinction is the loss that would occur of the only (known) form of rational life and the knowledge and civilization that that form of life has created. One thought here could be that just as some might consider it wrong to destroy an individual human heritage monument like the Sphinx, it would also be wrong if the advances made by humans over the past few millennia were lost or prevented from progressing. A related argument is made by those who feel that there is something special about humans’ capacity for rationality which is valuable in itself. Since humans are the only intelligent life that we know of, it would be a loss, in itself, to the world for that to end. I admit that I struggle to fully appreciate this thought. It seems to me that Henry Sidgwick was correct in thinking that these things are only important insofar as they are important to humans (Sidgwick 1874, I.IX.4).5 If there is no form of intelligent life in the future, who would there be to lament its loss since intelligent life is the only form of life capable of appreciating intelligence? Similarly, if there is no one with the rational capacity to appreciate historic monuments and civil progress, who would there be to be negatively affected or even notice the loss?6 However, even if there is nothing special about human rationality, just as some people try to prevent the extinction of nonhuman animal species, we might think that we ought also to prevent human extinction for the sake of biodiversity. The thought in this, as well as the earlier examples, must be that it would somehow be bad for the world if there were no more humans even though there would be no one for whom it is bad. This may be so but the only way to understand this reason is impersonally. Since we are concerned with wrongness rather than badness, we must ask whether something that impacts no one’s well-being, status or claims can be wrong. As we saw earlier, in the contractualist framework reasons must be personal rather than impersonal in order to provide grounds for reasonable rejection (Scanlon 1998, 218–223). Since the loss of civilization, intelligent life or biodiversity are per se impersonal reasons, there is no standpoint from which these reasons could be used to reasonably reject a principle that permitted extinction. Therefore, causing human extinction on the grounds of the loss of civilization, rational life or biodiversity would not be wrong. 2.3. Existing people would endure physical pain and/or painful and/or premature deaths Thinking about the ways in which human extinction might come about brings to the fore two more reasons it might be wrong. It could, for example, occur if all humans (or at least the critical number needed to be unable to replenish the population, leading to eventual extinction) underwent a sterilization procedure. Or perhaps it could come about due to anthropogenic climate change or a massive asteroid hitting the Earth and wiping out the species in the same way it did the dinosaurs millions of years ago. Each of these scenarios would involve significant physical and/or non-physical harms to existing people and their interests. Physically, people might suffer premature and possibly also painful deaths, for example. It is not hard to imagine examples in which the process of extinction could cause premature death. A nuclear winter that killed everyone or even just every woman under the age of 50 is a clear example of such a case. Obviously, some types of premature death themselves cannot be reasons to reject a principle. Every person dies eventually, sometimes earlier than the standard expected lifespan due to accidents or causes like spontaneously occurring incurable cancers. A cause such as disease is not a moral agent and therefore it cannot be wrong if it unavoidably kills a person prematurely. Scanlon says that the fact that a principle would reduce a person’s well-being gives that person a reason to reject the principle: ‘components of well-being figure prominently as grounds for reasonable rejection’ (Scanlon 1998, 214). However, it is not settled yet whether premature death is a setback to well-being. Some philosophers hold that death is a harm to the person who dies, whilst others argue that it is not.7 I will argue, however, that regardless of who is correct in that debate, being caused to die prematurely can be reason to reject a principle when it fails to show respect to the person as a rational agent. Scanlon says that recognizing others as rational beings with interests involves seeing reason to preserve life and prevent death: ‘appreciating the value of human life is primarily a matter of seeing human lives as something to be respected, where this involves seeing reasons not to destroy them, reasons to protect them, and reasons to want them to go well’ (Scanlon 1998, 104). The ‘respect for life’ in this case is a respect for the person living, not respect for human life in the abstract. This means that we can sometimes fail to protect human life without acting wrongfully if we still respect the person living. Scanlon gives the example of a person who faces a life of unending and extreme pain such that she wishes to end it by committing suicide. Scanlon does not think that the suicidal person shows a lack of respect for her own life by seeking to end it because the person whose life it is has no reason to want it to go on. This is important to note because it emphasizes the fact that the respect for human life is person-affecting. It is not wrong to murder because of the impersonal disvalue of death in general, but because taking someone’s life without their permission shows disrespect to that person. This supports its inclusion as a reason in the contractualist formula, regardless of what side ends up winning the ‘is death a harm?’ debate because even if death turns out not to harm the person who died, ending their life without their consent shows disrespect to that person. A person who could reject a principle permitting another to cause his or her premature death presumably does not wish to die at that time, or in that manner. Thus, if they are killed without their consent, their interests have not been taken into account, and they have a reason to reject the principle that allowed their premature death.8 This is as true in the case of death due to extinction as it is for death due to murder. However, physical pain may also be caused to existing people without killing them, but still resulting in human extinction. Imagine, for example, surgically removing everyone’s reproductive organs in order to prevent the creation of any future people. Another example could be a nuclear bomb that did not kill anyone, but did painfully render them infertile through illness or injury. These would be cases in which physical pain (through surgery or bombs) was inflicted on existing people and the extinction came about as a result of the painful incident rather than through death. Furthermore, one could imagine a situation in which a bomb (for example) killed enough people to cause extinction, but some people remained alive, but in terrible pain from injuries. It seems uncontroversial that the infliction of physical pain could be a reason to reject a principle. Although Scanlon says that an impact on well-being is not the only reason to reject principles, it plays a significant role, and indeed, most principles are likely to be rejected due to a negative impact on a person’s well-being, physical or otherwise. It may be queried here whether it is actually the involuntariness of the pain that is grounds for reasonable rejection rather than the physical pain itself because not all pain that a person suffers is involuntary. One can imagine acts that can cause physical pain that are not rejectable — base jumping or life-saving or improving surgery, for example. On the other hand, pushing someone off a cliff or cutting him with a scalpel against his will are clearly rejectable acts. The difference between the two cases is that in the former, the person having the pain inflicted has consented to that pain or risk of pain. My view is that they cannot be separated in these cases and it is involuntary physical pain that is the grounds for reasonable rejection. Thus, the fact that a principle would allow unwanted physical harm gives a person who would be subjected to that harm a reason to reject the principle. Of course the mere fact that a principle causes involuntary physical harm or premature death is not sufficient to declare that the principle is rejectable — there might be countervailing reasons. In the case of extinction, what countervailing reasons might be offered in favour of the involuntary physical pain/ death-inducing harm? One such reason that might be offered is that humans are a harm to the natural environment and that the world might be a better place if there were no humans in it. It could be that humans might rightfully be considered an all-things-considered hindrance to the world rather than a benefit to it given the fact that we have been largely responsible for the extinction of many species, pollution and, most recently, climate change which have all negatively affected the natural environment in ways we are only just beginning to understand. Thus, the fact that human extinction would improve the natural environment (or at least prevent it from degrading further), is a countervailing reason in favour of extinction to be weighed against the reasons held by humans who would experience physical pain or premature death. However, the good of the environment as described above is by definition not a personal reason. Just like the loss of rational life and civilization, therefore, it cannot be a reason on its own when determining what is wrong and countervail the strong personal reasons to avoid pain/death that is held by the people who would suffer from it.9 Every person existing at the time of the extinction would have a reason to reject that principle on the grounds of the physical pain they are being forced to endure against their will that could not be countervailed by impersonal considerations such as the negative impact humans may have on the earth. Therefore, a principle that permitted extinction to be accomplished in a way that caused involuntary physical pain or premature death could quite clearly be rejectable by existing people with no relevant countervailing reasons. This means that human extinction that came about in this way would be wrong. There are of course also additional reasons they could reject a similar principle which I now turn to address in the next section. 2.4. Existing people could endure non-physical harms I said earlier than the fact in itself that there would not be any future people is an impersonal reason and can therefore not be a reason to reject a principle permitting extinction. However, this impersonal reason could give rise to a personal reason that is admissible. So, the final important reason people might think that human extinction would be wrong is that there could be various deleterious psychological effects that would be endured by existing people having the knowledge that there would be no future generations. There are two main sources of this trauma, both arising from the knowledge that there will be no more people. The first relates to individual people and the undesired negative effect on well-being that would be experienced by those who would have wanted to have children. Whilst this is by no means universal, it is fair to say that a good proportion of people feel a strong pull towards reproduction and having their lineage continue in some way. Samuel Scheffler describes the pull towards reproduction as a ‘desire for a personalized relationship with the future’ (Scheffler 2012, 31). Reproducing is a widely held desire and the joys of parenthood are ones that many people wish to experience. For these people knowing that they would not have descendants (or that their descendants will endure painful and/or premature deaths) could create a sense of despair and pointlessness of life. Furthermore, the inability to reproduce and have your own children because of a principle/policy that prevents you (either through bans or physical interventions) would be a significant infringement of what we consider to be a basic right to control what happens to your body. For these reasons, knowing that you will have no descendants could cause significant psychological traumas or harms even if there were no associated physical harm. The second is a more general, higher level sense of hopelessness or despair that there will be no more humans and that your projects will end with you. Even those who did not feel a strong desire to procreate themselves might feel a sense of hopelessness that any projects or goals they have for the future would not be fulfilled. Many of the projects and goals we work towards during our lifetime are also at least partly future-oriented. Why bother continuing the search for a cure for cancer if either it will not be found within humans’ lifetime, and/or there will be no future people to benefit from it once it is found? Similar projects and goals that might lose their meaning when confronted with extinction include politics, artistic pursuits and even the type of philosophical work with which this paper is concerned. Even more extreme, through the words of the character Theo Faron, P.D. James says in his novel The Children of Men that ‘without the hope of posterity for our race if not for ourselves, without the assurance that we being dead yet live, all pleasures of the mind and senses sometimes seem to me no more than pathetic and crumbling defences shored up against our ruins’ (James 2006, 9). Even if James’ claim is a bit hyperbolic and all pleasures would not actually be lost, I agree with Scheffler in finding it not implausible that the knowledge that extinction was coming and that there would be no more people would have at least a general depressive effect on people’s motivation and confidence in the value of and joy in their activities (Scheffler 2012, 43). Both sources of psychological harm are personal reasons to reject a principle that permitted human extinction. Existing people could therefore reasonably reject the principle for either of these reasons. Psychological pain and the inability to pursue your personal projects, goals, and aims, are all acceptable reasons for rejecting principles in the contractualist framework. So too are infringements of rights and entitlements that we accept as important for people’s lives. These psychological reasons, then, are also valid reasons to reject principles that permitted or required human extinction.

#### 2] Non util ethics are too difficult to implement socially

Greene 07 – Joshua, Associate Professor of Social science in the Department of Psychology at Harvard University (The Secret Joke of Kant’s Soul published in Moral Psychology: Historical and Contemporary Readings, accessed: <https://www.gwern.net/docs/philosophy/ethics/2007-greene.pdf>, pages 47-50)

**What turn-of-the-millennium science** **is telling us is that human moral judgment is not a pristine rational enterprise**, that our **moral judgments are driven by a hodgepodge of emotional dispositions, which themselves were shaped by a hodgepodge of evolutionary forces, both biological and cultural**. **Because of this, it is exceedingly unlikely that there is any rationally coherent normative moral theory that can accommodate our moral intuitions**. Moreover, **anyone who claims to have such a theory**, or even part of one, **almost certainly doesn't**. Instead, what that person probably has is a moral rationalization. It seems then, that we have somehow crossed the infamous "is"-"ought" divide. How did this happen? Didn't Hume (Hume, 1978) and Moore (Moore, 1966) warn us against trying to derive an "ought" from and "is?" How did we go from descriptive scientific theories concerning moral psychology to skepticism about a whole class of normative moral theories? The answer is that we did not, as Hume and Moore anticipated, attempt to derive an "ought" from and "is." That is, our method has been inductive rather than deductive. We have inferred on the basis of the available evidence that the phenomenon of rationalist deontological philosophy is best explained as a rationalization of evolved emotional intuition (Harman, 1977). Missing the Deontological Point I suspect that **rationalist deontologists will remain unmoved by the arguments presented here**. Instead, I suspect, **they** **will insist that I have simply misunderstood what** Kant and like-minded **deontologists are all about**. **Deontology, they will say, isn't about this intuition or that intuition**. It's not defined by its normative differences with consequentialism. **Rather, deontology is about taking humanity seriously**. Above all else, it's about respect for persons. It's about treating others as fellow rational creatures rather than as mere objects, about acting for reasons rational beings can share. And so on (Korsgaard, 1996a; Korsgaard, 1996b). **This is, no doubt, how many deontologists see deontology. But this insider's view**, as I've suggested, **may be misleading**. **The problem**, more specifically, **is that it defines deontology in terms of values that are not distinctively deontological**, though they may appear to be from the inside. **Consider the following analogy with religion. When one asks a religious person to explain the essence of his religion, one often gets an answer like this: "It's about love**, really. It's about looking out for other people, looking beyond oneself. It's about community, being part of something larger than oneself." **This sort of answer accurately captures the phenomenology of many people's religion, but it's nevertheless inadequate for distinguishing religion from other things**. This is because many, if not most, non-religious people aspire to love deeply, look out for other people, avoid self-absorption, have a sense of a community, and be connected to things larger than themselves. In other words, secular humanists and atheists can assent to most of what many religious people think religion is all about. From a secular humanist's point of view, in contrast, what's distinctive about religion is its commitment to the existence of supernatural entities as well as formal religious institutions and doctrines. And they're right. These things really do distinguish religious from non-religious practices, though they may appear to be secondary to many people operating from within a religious point of view. In the same way, I believe that most of **the standard deontological/Kantian self-characterizatons fail to distinguish deontology from other approaches to ethics**. (See also Kagan (Kagan, 1997, pp. 70-78.) on the difficulty of defining deontology.) It seems to me that **consequentialists**, as much as anyone else, **have respect for persons**, **are against treating people as mere objects,** **wish to act for reasons that rational creatures can share, etc**. **A consequentialist respects other persons, and refrains from treating them as mere objects, by counting every person's well-being in the decision-making process**. **Likewise, a consequentialist attempts to act according to reasons that rational creatures can share by acting according to principles that give equal weight to everyone's interests, i.e. that are impartial**. This is not to say that consequentialists and deontologists don't differ. They do. It's just that the real differences may not be what deontologists often take them to be. What, then, distinguishes deontology from other kinds of moral thought? A good strategy for answering this question is to start with concrete disagreements between deontologists and others (such as consequentialists) and then work backward in search of deeper principles. This is what I've attempted to do with the trolley and footbridge cases, and other instances in which deontologists and consequentialists disagree. **If you ask a deontologically-minded person why it's wrong to push someone in front of speeding trolley in order to save five others, you will get** characteristically deontological **answers**. Some **will be tautological**: **"Because it's murder!"** **Others will be more sophisticated: "The ends don't justify the means**." "You have to respect people's rights." **But**, as we know, **these answers don't really explain anything**, because **if you give the same people** (on different occasions) **the trolley case** or the loop case (See above), **they'll make the opposite judgment**, even though their initial explanation concerning the footbridge case applies equally well to one or both of these cases. **Talk about rights, respect for persons, and reasons we can share are natural attempts to explain, in "cognitive" terms, what we feel when we find ourselves having emotionally driven intuitions that are odds with the cold calculus of consequentialism**. Although these explanations are inevitably incomplete, **there seems to be "something deeply right" about them because they give voice to powerful moral emotions**. **But, as with many religious people's accounts of what's essential to religion, they don't really explain what's distinctive about the philosophy in question**.

#### 3] That justifies util – it’s impartial, specific to public actors, and resolves infinite regress which explains all value.

Greene 15 — (Joshua Greene, Professor of Psychology @ Harvard, being interviewed by Russ Roberts, “Joshua Greene on Moral Tribes, Moral Dilemmas, and Utilitarianism”, The Library of Economics and Liberty, 1-5-15, Available Online at <https://www.econtalk.org/joshua-greene-on-moral-tribes-moral-dilemmas-and-utilitarianism/#audio-highlights>, accessed 5-17-20, HKR-AM) \*\*NB: Guest = Greene, and only his lines are highlighted/underlined

Guest: Okay. So, I think utilitarianism is very much misunderstood. And this is part of the reason why we shouldn't even call it utilitarianism at all. We should call it what I call 'deep pragmatism', which I think better captures what I think utilitarianism is really like, if you really apply it in real life, in light of an understanding of human nature. But, we can come back to that. The idea, going back to the tragedy of common-sense morality is you've got all these different tribes with all of these different values based on their different ways of life. What can they do to get along? And I think that the best answer that we have is--well, let's back up. In order to resolve any kind of tradeoff, you have to have some kind of common metric. You have to have some kind of common currency. And I think that what utilitarianism, whether it's the moral truth or not, is provide a kind of common currency. So, what is utilitarianism? It's basically the idea that--it's really two ideas put together. One is the idea of impartiality. That is, at least as social decision makers, we should regard everybody's interests as of equal worth. Everybody counts the same. And then you might say, 'Well, but okay, what does it mean to count everybody the same? What is it that really matters for you and for me and for everybody else?' And there the utilitarian's answer is what is sometimes called, somewhat accurately and somewhat misleadingly, happiness. But it's not really happiness in the sense of cherries on sundaes, things that make you smile. It's really the quality of conscious experience. So, the idea is that if you start with anything that you value, and say, 'Why do you care about that?' and keep asking, 'Why do you care about that?' or 'Why do you care about that?' you ultimately come down to the quality of someone's conscious experience. So if I were to say, 'Why did you go to work today?' you'd say, 'Well, I need to make money; and I also enjoy my work.' 'Well, what do you need your money for?' 'Well, I need to have a place to live; it costs money.' 'Well, why can't you just live outside?' 'Well, I need a place to sleep; it's cold at night.' 'Well, what's wrong with being cold?' 'Well, it's uncomfortable.' 'What's wrong with being uncomfortable?' 'It's just bad.' Right? At some point if you keep asking why, why, why, it's going to come down to the conscious experience--in Bentham's terms, again somewhat misleading, the pleasure and pain of either you or somebody else that you care about. So the utilitarian idea is to say, Okay, we all have our pleasures and pains, and as a moral philosophy we should all count equally. And so a good standard for resolving public disagreements is to say we should go with whatever option is going to produce the best overall experience for the people who are affected. Which you can think of as shorthand as maximizing happiness--although I think that that's somewhat misleading. And the solution has a lot of merit to it. But it also has endured a couple of centuries of legitimate criticism. And one of the biggest criticisms--and now we're getting back to the Trolley cases, is that utilitarianism doesn't adequately account for people's rights. So, take the footbridge case. It seems that it's wrong to push that guy off the footbridge. Even if you stipulate that you can save more people's lives. And so anyone who is going to defend utilitarianism as a meta-morality--that is, a solution to the tragedy of common sense morality, as a moral system to adjudicate among competing tribal moral systems--if you are going to defend it in that way, as I do, you have to face up to these philosophical challenges: is it okay to kill on person to save five people in this kind of situation? So I spend a lot of the book trying to understand the psychology of cases like the footbridge case. And you mention these being kind of unrealistic and weird cases. That's actually part of my defense.

#### 5] IR Discourse doesn’t shape policy—future uncertainty alone establishes material forces that support balancing and a focus on relative power. It’s not about inter-subjective meaning—the mere presence of the other establishes anarchical nature of state interaction.

**Copeland**, Associate Professor and Director Dept. of Government and Foreign Affairs @ University of Virginia, **2006** (Dale, “The Constructivist Challenge to Structural Realism: A Review Essay”, Constructivism and International Relations, Alexander Wendt and His Critics, https://books.google.com/books?id=FxNx1qqGThEC&pg=PA15&lpg=PA15&dq=The+distinction+between+Wendt%E2%80%99s+focus+on+structure+as+the+coaction+(interaction)+of+units,+and+a+realist+focus+on+structure+as+the+potential+for+coaction,+is+neither+semantic+nor+trivial.+It+reflects+a+fundamentally+different+conception+of+the+role+of+time+in+international+politics.+For+Wendt+and+other+constructivists,+it+is+the+past+that+matters%E2%80%94how+interactions+and+gestures+in+the+historical+process+have+socialized+actors+toward+certain+conceptions+of+self+and+other.+Realists+certainly+do+not+dismiss+the+ways+that+past+interaction+shape+current+beliefs.&source=bl&ots=UPoCIHoXuV&sig=ACfU3U0Vk-YWOI5fy8I57nkFMhyXZcXJeA&hl=en&sa=X&ved=2ahUKEwjLtIfs-Mv1AhXlDEQIHWHeCgUQ6AF6BAgCEAM#v=onepage&q=The%20distinction%20between%20Wendt%E2%80%99s%20focus%20on%20structure%20as%20the%20coaction%20(interaction)%20of%20units%2C%20and%20a%20realist%20focus%20on%20structure%20as%20the%20potential%20for%20coaction%2C%20is%20neither%20semantic%20nor%20trivial.%20It%20reflects%20a%20fundamentally%20different%20conception%20of%20the%20role%20of%20time%20in%20international%20politics.%20For%20Wendt%20and%20other%20constructivists%2C%20it%20is%20the%20past%20that%20matters%E2%80%94how%20interactions%20and%20gestures%20in%20the%20historical%20process%20have%20socialized%20actors%20toward%20certain%20conceptions%20of%20self%20and%20other.%20Realists%20certainly%20do%20not%20dismiss%20the%20ways%20that%20past%20interaction%20shape%20current%20beliefs.&f=false)

The distinction between Wendt’s focus on structure as the coaction (interaction) of units, and a realist focus on structure as the potential for coaction, is neither semantic nor trivial. It reflects a fundamentally different conception of the role of time in international politics. For Wendt and other constructivists, it is the past that matters—how interactions and gestures in the historical process have socialized actors toward certain conceptions of self and other. Realists certainly do not dismiss the ways that past interaction shape current beliefs.33 Most fundamentally, however, realism is a forward-looking theory. States are rational maximizers of their security over the foreseeable future. Hence they remain constantly vigilant for any changes in their external situation that might damage their chances for survival later. Reduced to five words, then, the divide between constructivism and systemic realism is all about **past socialization versus future uncertainty.**34 This analysis has a straightforward implication: there is no need for any interaction in the present or past for a constraining structure to exist. **Power structures**—the relative distribution of material resources—are **not generated by social practices** (even if practices can sometimes change the distribution over time). Structures exist by the **mere presence of the other**, and its potential to do harm in the future—its potential to ‘coact’ by invading, if you will. Hence, in anarchy, even when a state has no relations with the other, even if the other does not know that the state exists, the state is forced by the situation to **contemplate future scenarios in which the other could do it harm**. When scouts returned to ancient Assyria with the first reports on the Egyptian empire and its phenomenal resources, Assyrian leaders would have been imprudent not to have at least considered the possibility of an Egyptian invasion. No interaction was required for Egypt’s relative power to have a constraining effect on Assyria’s behavior.35

#### [6] Imagining contexts in evaluating existential risks is desirable.

**Stevens ’18** [Tim; 2018; Senior Lecturer in Global Security at Kings College London; *Millennium: Journal of International Studies*, “Exeunt Omnes? Survival, Pessimism and Time in the Work of John H. Herz,” p. 283-302]

Herz explicitly combined, therefore, a political realism with an ethical idealism, resulting in what he termed a ‘survival ethic’.65 This was applicable to all humankind and its propagation relied on the generation of what he termed ‘world-consciousness’.66 Herz’s implicit recognition of an open yet linear temporality allowed him to imagine possible futures aligned with the survival ethic, whilst at the same time imagining futures in which humans become extinct. His pessimism about the latter did not preclude working towards the former.

As Herz recognized, it was one thing to develop an ethics of survival but quite another to translate theory into practice. What was required was a collective, transnational and inherently interdisciplinary effort to address nuclear and environmental issues and to problematize notions of security, sustainability and survival in the context of nuclear geopolitics and the technological transformation of society. Herz proposed various practical ways in which young people in particular could become involved in this project. One idea floated in the 1980s, which would alarm many in today’s more cosmopolitan and culturally-sensitive IR, was for a Peace Corps-style ‘peace and development service’, which would ‘crusade’ to provide ‘something beneficial for people living under unspeakably sordid conditions’ in the ‘Third World’.67 He expended most of his energy, however, from the 1980s onwards, in thinking about and formulating ‘a new subdiscipline of the social sciences’, which he called ‘Survival Research’.

68 Informed by the survival ethic outlined above, and within the overarching framework of his realist liberal internationalism, Survival Research emerged as Herz’s solution to the shortcomings of academic research, public education and policy development in the face of global catastrophe.69 It was also Herz’s plea to scholars to venture beyond the ivory tower and become – excusing the gendered language of the time – ‘homme engagé, if not homme révolté’.70 His proposals for Survival Research were far from systematic but they reiterated his life-long concerns with nuclear and environmental issues, and with the necessity to act in the face of threats to human survival. The principal responsibilities of survival researchers were two-fold. One, to raise awareness of survival issues in the minds of policy-makers and the public, and to demonstrate the link between political inaction now and its effect on subsequent human survival. Two, to suggest and shape new attitudes more ‘appropriate to the solution of new and unfamiliar survival problems’, rather than relying on ingrained modes of thought and practice.71 The primary initial purpose, therefore, of Survival Research would be to identify scientific, sociocultural and political problems bearing on the possibilities of survival, and to begin to develop ways of overcoming these. This was, admittedly, non-specific and somewhat vague, but the central thrust of his proposal was clear: ‘In our age of global survival concerns, it should be the primary responsibility of scholars to engage in survival issues’.72 Herz considered IR an essential disciplinary contributor to this endeavour, one that should be promiscuous across the social and natural sciences. It should not be afraid to think the worst, if the worst is at all possible, and to establish the various requirements – social, economic, political – of ‘a livable world’.73 How this long-term project would translate into global policy is not specified but, consistent with his previous work, Herz identified the need for shifts in attitudes to and awareness of global problems and solutions. Only then would it be possible for ‘a turn round that demands leadership to persuade millions to change lifestyles and make the sacrifices needed for survival’.

74 Productive pessimism and temporality

In 1976, shortly before he began compiling the ideas that would become Survival Research, Herz wrote:

For the first time, we are compelled to take the futuristic view if we want to make sure that there will be future generations at all. Acceleration of developments in the decisive areas (demographic, ecological, strategic) has become so strong that even the egotism of après nous le déluge might not work because the déluge may well overtake ourselves, the living.

Of significance here is not the appeal to futurism per se, although this is important, but the suggestion this is ‘the first time’ futurism is necessary to ensuring human survival. This is Herz the realist declaring a break with conventional realism: Herz is not bound to a cyclical vision of political or historical time in which events and processes reoccur over and again. His identification of nuclear weapons as an ‘absolute novum’ in international politics demonstrates this belief in the non-cyclical nature of humankind’s unfolding temporality.76 As Sylvest observes of Herz’s attitude to the nuclear revolution, ‘the horizons of meaning it produced installed a temporal break with the past, and simultaneously carried a promise for the future’.

This ‘promise for the future’ was not, however, a simple liberal view of a better future consonant with human progress. His autobiography is clear that his experiences of Nazism and the Holocaust destroyed all remnants of any original belief in ‘inevitable progress’.78 His frustration at scientism, technocratic deception, and the brutal rationality of twentieth-century killing, all but demanded a rejection of the liberal dream and the inevitability of its consummation. If the ‘new age’ ushered in by nuclear weapons, he wrote, is characterized by anything, it is by its ‘indefiniteness of the age and the uncertainties of the future’; it was impossible under these conditions to draw firm conclusions about the future course of international politics.79 Instead, he recognised the contingency, precarity and fragility of international politics, and the ghastly tensions inherent to the structural core of international politics, the security dilemma.

80 Herz was uneasy with both cyclical and linear-progressive ways of perceiving historical time. The former ‘closed’ temporalities are endemic to versions of realist IR, the latter to post-Enlightenment narratives feeding liberal-utopian visions of international relations and those of Marxism.81 In their own ways, each marginalizes and diminishes the contingency of the social world in and through time, and the agency of political actors in effecting change. Simultaneously, each shapes the futures that may be imagined and brought into being. Herz recognised this danger. Whilst drawing attention to his own gloomy disposition, he warns that without care and attention, ‘the assumption may determine the event’.82 As a pessimist, Herz was alert to the hazard of succumbing to negativity, cynicism or resignation. E.H. Carr recognised this also, in the difference between the ‘deterministic pessimism’ of ‘pure’ realism and those realists ‘who have made their mark on history’; the latter may be pessimists but they still believe ‘human affairs can be directed and modified by human action and human thought’.83 Herz would share this anti-deterministic perspective with Carr. Moreover, the possibility of agency is a product of a temporality ‘neither temporally closed nor deterministic, neither cyclical nor linear-progressive; it is rooted in contingency’.

7] Chinese space industry has no regulations –wrecks the environment with toxic fuel leakage, causing immense damage to the land of ethnic minorities

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Space launch is becoming a highly competitive market and the United States’ leadership position in the new landscape has been based to a great extent on its successful regulatory model. The framework first established by the Commercial Space Launch Act of 1984 has provided startups and investors with defined processes and licensing regimes that are workable for business while ensuring public safety. The generally effective and forward thinking work of Federal Aviation Administration’s Office of Commercial Space Transportation (AST), the Federal Communications Commission and more recently the Office of Space Commerce have actually attracted foreign founders and investors to set up shop in the United States. Space has been a rare case of American regulatory competitive advantage. Witness the success of Rocket Lab, Virgin Orbit and Firefly as U.S. entities. These firms might easily have taken their business elsewhere, but U.S. talent and the rule of law have made space launch America’s business to lose. China has recently made it clear it intends to contend aggressively over this important industry and it is worth noting that extremely lax regulation has often played a critical role that nation’s ability to undercut other U.S. industries.

On April 20, China launched the 100th mission of its highly successful Long March-3 rocket series. While the powerful 3B/G2 (CZ-3B) variant successfully lofted a navigation satellite, designated as Beidou-3I1Q, toward its geosynchronous orbit, it also littered the Chinese landscape with a collection of dangerous rocket boosters leaking toxic fuel. The safety standards used in Chinese space launch would leave American regulators apoplectic. As is the case in many global industries, this lax approach to environmental standards and human safety promises to provide China with a significant cost advantage over more responsible and highly regulated American firms.

This launch was conducted from the LC3 pad at the Xichang Satellite Launch Center in China’s southwestern Sichuan Province. While the site is remote, it is entirely land locked and the Long March overflew a large swath of populated territory. As it did so, the rocket’s four strap-on boosters were jettisoned to fall somewhere across the mountainous landscape of Sichuan and the core of the Long March 3B/G2 first stage followed somewhere to east. Unlike SpaceX’s elegantly controlled first stages, the Chinese boosters just fall where they may. Photos on the Sina Weibo microblogging site show debris from the recent launch lying alongside a farm as well as in a river. The blog reports that the government had “the propaganda in place” and that villagers “were satisfied,” presumably with not having been simply crushed by any of the plummeting space junk.

What these rural farms probably don’t know is that the Long March 3B runs on a hypergolic mix of unsymmetrical dimethylhydrazine (UDMH) and nitrogen tetroxide (NTO). UDMH is a toxic fuel and a known carcinogen that mixes well in water. The rocket’s N204 oxidizer is also extremely dangerous, causing liver damage. Three U.S. astronauts came very close to serious, injury after being briefly exposed to N204 during the splashdown phase of the 1975 Apollo-Soyuz space mission. Vance Brand lost consciousness and all three had to be hospitalized for two weeks. These boosters are not the sort of stuff that should be left around for curious kids to play Taikonaut on. A frightening video from last year shows a jettisoned Long March booster crashing to earth just outside a town. The resulting fireball and toxic mushroom cloud removes any doubt that these spent boosters contain significant quantities of propellants.