# T

### Extra - T

#### Interpretation – the affirmative must defend the hypothetical implementation of a topical plan

#### Violation – they garner offense through “formation of this movement is my advocacy” and “rejecting this discourse” not just from the implementation of the resolution or a plan.

#### Definitions:

#### Appropriation requires a permanent settlement or taking for exclusive use – temporary use not included

**Gorove 69** Stephen Gorove, Interpreting Article II of the Outer Space Treaty, 37 Fordham L. Rev. 349 (1969). Available at: <https://ir.lawnet.fordham.edu/flr/vol37/iss3/2> Stephen Gorove (1917-2001) was a space law education pioneer who helped develop international treaties establishing jurisdictional boundaries and liability limits for space exploration and relevant issues. He served as a professor of space law and director of space studies and policy, from 1991-1998, at the University of Mississippi. He organized the first North American international space law conference, which was held at the University of Mississippi in 1969. He founded and chaired the editorial advisory board for the first space law journal, the Journal of Space Law, in 1973. He served as the first director of the NASA-sponsored National Center for Remote Sensing, Air and Space Law from 2000 until his passing.

With respect to the concept of appropriation the basic question is what constitutes "appropriation," as used in the Treaty, especially in contradistinction to casual or temporary use. The term "appropriation" is used most frequently to denote the taking of property for one's own or exclusive use with a sense of permanence. Under such interpretation the establishment of a permanent settlement or the carrying out of commercial activities by nationals of a country on a celestial body may constitute national appropriation if the activities take place under the supreme authority (sovereignty) of the state. Short of this, if the state wields no exclusive authority or jurisdiction in relation to the area in question, the answer would seem to be in the negative, unless, the nationals also use their individual appropriations as cover-ups for their state's activities.5 In this connection, it should be emphasized that the word "appropriation" indicates a taking which involves something more than just a casual use. Thus a temporary occupation of a landing site or other area, just like the temporary or nonexclusive use of property, would not constitute appropriation. By the same token, any use involving consumption or taking with intention of keeping for one's own exclusive use would amount to appropriation. The question may also be asked whether or not the purpose of appropriation, that is whether it takes place in the name of science, for enrichment, or for any other purpose would have a bearing on the question of its lawfulness. Normally, the purpose of appropriation should have little bearing on the prohibition except that to constitute appropriation, the acquisition must be carried out for the purpose of one's own or exclusive use. However, since the Treaty proclaims freedom of scientific investigation in outer space, 6 there seems to be some support for the argument that if the appropriation takes place in the name of science or in the course of a scientific investigation in outer space, including the moon and other celestial bodies, such use would not be prohibited under the Treaty. Nonetheless, if the proclaimed principle is taken literally, the same argument could not be used with equal force in a case where the scientific investigation was carried out on the earth. It is doubtful whether the Treaty intended such effect, but if it did not, it is unfortunate that it fails to make it clear.

#### Private company is defined as

Chen, 21, Learn about Private Companies, https://www.investopedia.com/terms/p/privatecompany.asp, Investopedia,

A private company is a firm held under private ownership. Private companies may issue stock and have shareholders, but their shares do not trade on public exchanges and are not issued through an [initial public offering](https://www.investopedia.com/terms/i/ipo.asp) (IPO). As a result, private firms do not need to meet the Securities and Exchange Commission's (SEC) strict filing requirements for [public companies](https://www.investopedia.com/terms/p/publiccompany.asp). In general, the shares of these businesses are less liquid, and their [valuations](https://www.investopedia.com/ask/answers/09/how-to-value-shares-in-private-company.asp) are more difficult to determine.

#### Meriam webster defines outer space

<https://www.merriam-webster.com/dictionary/outer%20space>

: space immediately outside the earth's atmosphere broadly : interplanetary or interstellar space

#### Prefer our interp – 2 impacts

#### Procedural fairness and competitive equity – their interpretation *explodes limits*, opening the floodgates to an infinite scope of 1ACs that 2Ns can't reasonably be expected to prepare for – it also allows the aff to *pre-determine the terrain of competition* and contestation by adapting any methodology, analytic, or literature base, which only grants the neg *concessionary ground* and forces us to debate against truisms – this kills neg ground and creates a structural side-bias for the aff. *Debate is fundamentally a competitive game*, which means that fairness is a d-rule and a prerequisite to evaluating aff offense. They obviously care about fairness bc they follow speech times, etc. If procedural fairness is irrelevant, then I get a 2NR.

#### Idea Testing/Argument-skills – A well-defined resolution is critical to allow the neg to refute the aff in an in-depth fashion---this process of negation produces iterative testing and improvement, where we learn to improve our arguments based on our opponents’ arguments. This means that a) they are only winning the arguments they are bc of my inability to predictably prepare and respond to them. And, b) don’t weight the aff against topicality because a predictable stasis point is a pre-req to truth-testing the aff. We can’t know if their arguments are true without testing them so always evaluate T first.

#### Drop the debater: Hold the line – do not let them severe out of their extra topical offense. Time has already been lost debating it and it would be unfair to let them kick out of offense. That would allow them to run 10 different advocacies and kick out of the non-T ones making it impossible to be neg. Also voting neg is important to shape the norms of debate.

#### Topicality is a voting issue that should be evaluated through competing interps because reasonability is arbitrary and invites intervention. Also, topicality is a yes or no question. You either are topical or you are not topical.

#### No RVIS: You shouldn’t win for following the rules and RVIS would lead to a chilling effect preventing a check on legitimate abuse.

# FW

#### Counter role of the judge: Vote for the debater that better proves the desirability of the plan/counterplan. Anything else is arbitrary and self-serving.

#### The ballot is a referendum on the desirability of the plan text---evaluate outcome of hypothetical implementation first – any other model gives aff offense not based in the plan---explodes neg research burden AND a well-defined resolution allows us to develop argument skills in which we can have better debates about solutions to material conflicts. This means that even after debaters leave this activity, they become better policy-makers, advocates, and community-organizers that can defend their positions against criticism. This IL turns the spill-over claims of the K. The fact that they have to read this kritik proves the inherency of the alternative, people in the status quo don’t care about their message. Topical, predictable, plan-based debate allows young activists to better persuade unsympathetic audiences out in the real world. The AFF is just a revolutionary for the weekend, we need activists for the decades to come.

**The standard is util. Prefer:**

1. **Pleasure and pain are intrinsically valuable**

**Moen 16** [Ole Martin Moen, Research Fellow in Philosophy at University of Oslo “An Argument for Hedonism” Journal of Value Inquiry (Springer), 50 (2) 2016: 267–281] SJDI

Let us start by observing, empirically, that a widely shared judgment about intrinsic value and disvalue is that **pleasure is intrinsically valuable and pain is intrinsically disvaluable**. On virtually any proposed list of intrinsic values and disvalues (we will look at some of them below), pleasure is included among the intrinsic values and pain among the intrinsic disvalues. This inclusion makes intuitive sense, moreover, for **there is something undeniably good about the way pleasure feels and something undeniably bad about the way pain feels**, and neither the goodness of pleasure nor the badness of pain seems to be exhausted by the further effects that these experiences might have. “Pleasure” and “pain” are here understood inclusively, as encompassing anything hedonically positive and anything hedonically negative.2 The special value statuses of pleasure and pain are manifested in how we treat these experiences in our everyday reasoning about values. If you tell me that you are heading for the convenience store, I might ask: “What for?” This is a reasonable question, for when you go to the convenience store you usually do so, not merely for the sake of going to the convenience store, but for the sake of achieving something further that you deem to be valuable. You might answer, for example: “To buy soda.” This answer makes sense, for soda is a nice thing and you can get it at the convenience store. I might further inquire, however: “What is buying the soda good for?” This further question can also be a reasonable one, for it need not be obvious why you want the soda. You might answer: “Well, I want it for the pleasure of drinking it.” If I then proceed by asking “But what is the pleasure of drinking the soda good for?” the discussion is likely to reach an awkward end. The reason is that the **pleasure is not good for anything further;** it is simply that for which going to the convenience store and buying the soda is good.3 As Aristotle observes: “We never ask [a man] what his end is in being pleased, because we assume that pleasure is choice worthy in itself.”4 Presumably, a similar story can be told in the case of pains, for if someone says “This is painful!” we never respond by asking: “And why is that a problem?” **We take for granted that if something is painful, we have a sufficient explanation of why it is bad.** If we are onto something in our everyday reasoning about values, it seems that **pleasure and pain are both places where we reach the end of the line in matters of value.**

1. **Death is the worse possible thing since it erases our very existence**

Paterson 03, Craig [Department of Philosophy, Providence College, Rhode Island] 2003, “A Life Not Worth Living?”, Studies in Christian Ethics

Contrary to those accounts, I would argue that it is **death** per se that **is** really **the objective evil** for us, not because it deprives us of a prospective future of overall good judged better than the alter- native of non-being. It cannot be about harm to a former person who has ceased to exist, for no person actually suffers from the sub-sequent non-participation. Rather, death in itself is an evil to us because **it ontologically destroys the** current existent **subject** — it is the ultimate in metaphysical lightning strikes.80 The evil of death is truly an ontological evil borne by the person who already exists, independently of calculations about better or worse possible lives. Such an evil need not be consciously experienced in order to be an evil for the kind of being a human person is. Death is an evil because of the change in kind it brings about, a change that is destructive of the type of entity that we essentially are. **Anything**, whether caused naturally or caused by human intervention (intentional or unintentional) **that** drastically **interferes in the process of maintaining** the person in **existence is an objective evil** for the person. What is crucially at stake here, and is dialectically supportive of the self-evidency of the basic good of human life, is that death is a radical interference with the current life process of the kind of being that we are. In consequence, **death** itself **can be** credibly **thought of as a ‘primitive evil’ for all persons**, regardless of the extent to which they are currently or prospectively capable of participating in a full array of the goods of life.81  In conclusion, concerning willed human actions, it is justifiable to state that any intentional **rejection of human life** itself **cannot** therefore **be warranted since it is** an expression of an **ultimate disvalue** for the subject, namely, the destruction of the present person; a radical ontological good that we cannot begin to weigh objectively against the travails of life in a rational manner. To deal with the sources of disvalue (pain, suffering, etc.) we should not seek to irrationally destroy the person, the very source and condition of all human possibility.82

1. **Requires the prevention of extinction which is a pre-req to all other frameworks.**

GPP 17 Global Priorities Project, [Future of Humanity Institute at the University of Oxford, Ministry for Foreign Affairs of Finland] 2017, “Existential Risk: Diplomacy and Governance,” Global Priorities Project, <https://www.fhi.ox.ac.uk/wp-content/uploads/Existential-Risks-2017-01-23.pdf>

1.2. THE ETHICS OF EXISTENTIAL RISK In his book Reasons and Persons, Oxford philosopher Derek Parfit advanced an influential argument about the importance of avoiding extinction: I believe that if we destroy mankind, as we now can, this outcome will be much worse than most people think. Compare three outcomes: (1) Peace. (2) A nuclear war that kills 99% of the world’s existing population. (3) A nuclear war that kills 100%. (2) would be worse than (1), and (3) would be worse than (2). Which is the greater of these two differences? Most people believe that the greater difference is between (1) and (2). I believe that the difference between (2) and (3) is very much greater. ... The Earth will remain habitable for at least another billion years. **Civilization began only a few thousand years ago. If we do not destroy mankind, these** few thousand **years may be only a tiny fraction of the whole of** civilized **human history**. The difference between (2) and (3) may thus be the difference between this tiny fraction and all of the rest of this history. If we compare this possible history to a day, what has occurred so far is only a fraction of a second.65 In this argument, it seems that Parfit is assuming that the survivors of a nuclear war that kills 99% of the population would eventually be able to recover civilisation without long-term effect. As we have seen, this may not be a safe assumption – but for the purposes of this thought experiment, the point stands. **What makes** existential catastrophes especially bad is that they would “destroy the future,” as another Oxford philosopher, Nick Bostrom, puts it.66 **This future could potentially be extremely long and full of flourishing, and would therefore have** extremely large value. In standard risk analysis, when working out how to respond to risk, we work out the expected value of risk reduction, by weighing the probability that an action will prevent an adverse event against the severity of the event. **Because the value of preventing existential catastrophe is so vast, even a tiny probability of prevention has huge** expected **value**.67 Of course, there is persisting reasonable disagreement about ethics and there are a number of ways one might resist this conclusion.68 Therefore, it would be unjustified to be overconfident in Parfit and Bostrom’s argument. In some areas, government policy does give significant weight to future generations. For example, in assessing the risks of nuclear waste storage, governments have considered timeframes of thousands, hundreds of thousands, and even a million years.69 Justifications for this policy usually appeal to principles of intergenerational equity according to which future generations ought to get as much protection as current generations.70 Similarly, widely accepted norms of sustainable development require development that meets the needs of the current generation without compromising the ability of future generations to meet their own needs.71 However, when it comes to existential risk, it would seem that we fail to live up to principles of intergenerational equity. Existential catastrophe would not only give future generations less than the current generations; it would give them nothing. Indeed, reducing existential risk plausibly has a quite low cost for us in comparison with the huge expected value it has for future generations. In spite of this, relatively little is done to reduce existential risk. Unless we give up on norms of intergenerational equity, they give us a strong case for significantly increasing our efforts to reduce existential risks. 1.3. WHY EXISTENTIAL RISKS MAY BE SYSTEMATICALLY UNDERINVESTED IN, AND THE ROLE OF THE INTERNATIONAL COMMUNITY In spite of the importance of existential risk reduction, it probably receives less attention than is warranted. As a result, concerted international cooperation is required if we are to receive adequate protection from existential risks. 1.3.1. Why existential risks are likely to be underinvested in There are several reasons why existential risk reduction is likely to be underinvested in. Firstly, it is a global public good. Economic theory predicts that such goods tend to be underprovided. The benefits of existential risk reduction are widely and indivisibly dispersed around the globe from the countries responsible for taking action. Consequently, a country which reduces existential risk gains only a small portion of the benefits but bears the full brunt of the costs. Countries thus have strong incentives to free ride, receiving the benefits of risk reduction without contributing. As a result, too few do what is in the common interest. Secondly, as already suggested above, existential risk reduction is an intergenerational public good: most of the benefits are enjoyed by future generations who have no say in the political process. For these goods, the problem is temporal free riding: the current generation enjoys the benefits of inaction while future generations bear the costs. Thirdly, many existential risks, such as machine superintelligence, engineered pandemics, and solar geoengineering, pose an unprecedented and uncertain future threat. Consequently, it is hard to develop a satisfactory governance regime for them: there are few existing governance instruments which can be applied to these risks, and it is unclear what shape new instruments should take. In this way, our position with regard to these emerging risks is comparable to the one we faced when nuclear weapons first became available. Cognitive biases also lead people to underestimate existential risks. **Since there have not been any catastrophes of this magnitude, these risks are not salient to** politicians and **the public**.72 This is an example of the misapplication of the availability heuristic, a mental shortcut which assumes that something is important only if it can be readily recalled. **Another cognitive bias affecting perceptions of existential risk is scope neglect**. In a seminal 1992 study, three groups were asked how much they would be willing to pay to save 2,000, 20,000 or 200,000 birds from drowning in uncovered oil ponds. The groups answered $80, $78, and $88, respectively.73 In this case, the size of the benefits had little effect on the scale of the preferred response. **People become numbed to the effect of saving lives when the numbers get too large**.74 Scope neglect is a particularly acute problem for existential risk because the numbers at stake are so large. Due to scope neglect, **decision-makers are prone to treat existential risks in a similar way to problems which are less severe by many orders of magnitude.** A wide range of other cognitive biases are likely to affect the evaluation of existential risks.75

# DA

## China DA

#### China challenging US dominance in space – private sector maintains the US’s preeminence

Harding 21 Harding, Luke. "The Space Race Is Back On – But Who Will Win?". The Guardian, 2021, <https://www.theguardian.com/science/2021/jul/16/the-space-race-is-back-on-but-who-will-win>. Luke Harding is a Guardian foreign correspondent. His book [Shadow State](https://guardianbookshop.com/shadow-state-9781783352050.html) is published by Guardian Faber.

Liu Boming took in the dizzy view. Around him lay the inky vastness of space. Below was the Earth. “Wow,” he said, laughing. “It’s too beautiful out here.” Over the next seven hours Liu and his colleague Tang Hongbo carried out China’s second spacewalk, helped along by a giant robotic arm. Mission accomplished, the two taikonauts – China’s astronauts – clambered back into their home for the next three months: Beijing’s new space station. The core module of the station, named Tiangong, meaning “heavenly palace”, was launched in April. “There will be more spacewalks. The station will keep growing,” Liu said. Meanwhile, on Mars, a Chinese rover was exploring. Video shows the [vehicle trundling over a rocky surface](https://www.theguardian.com/world/video/2021/jun/27/china-releases-footage-from-its-mars-rover-video). There is even sound: an eerie mechanical groaning. Since landing in May the Zhurong probe has been busy seeking clues as to whether Mars once supported life. There is no answer yet: so far it has travelled just over 410 metres. China is only the second country to land and operate a rover on the red planet, after the US. The frantic tempo of the China National [Space](https://www.theguardian.com/science/space) Administration’s (CNSA) recent programme is reminiscent of the cold war, when Moscow and Washington were superpower rivals scrambling to put the first man in space and land on the moon. Half a century on, space has opened up. It is less ideological and a lot more crowded. About 72 countries have space programmes, including India, Brazil, Japan, Canada, South Korea and the UAE. The European Space Agency is active too, while the UK boasts the most private space startups after the US. Space today is also highly commercial. On Sunday [Richard Branson](https://www.theguardian.com/business/richard-branson) flew to the edge of space and back again in his Virgin Galactic passenger rocket. On Tuesday, Branson’s fellow billionaire Jeff Bezos is due to travel in his own reusable craft, New Shepard, built by the Amazon founder’s company Blue Origin and launched from west Texas. Non-state actors play an increasingly important role in space exploration. Elon Musk’s SpaceX vehicles have made numerous flights to the International Space Station (ISS), and [since last year they have transported people as well as cargo](https://www.spacex.com/human-spaceflight/iss/index.html). Later this year Musk is due to send his own all-civilian crew into orbit – though he isn’t going himself. Even so, space still reflects tensions on Earth. “Astropolitics follows terrapolitics,” says [Mark Hilborne](https://twitter.com/space_security?lang=en), a lecturer in defence studies at King’s College London. Up there anything goes, he adds. “Space governance is a bit fuzzy. Laws are few and very old. They are not written for asteroid mining or for a time when companies dominate.” The biggest challenge to US space supremacy comes not from [Russia](https://www.theguardian.com/world/russia) – heir to the Soviet Union’s pioneering space programme, which launched the Sputnik satellite and got the first human into space in the form of Yuri Gagarin – but from China. In 2011 Congress prohibited US scientists from cooperating with Beijing. Its fear: scientific espionage. Taikonauts are banned from visiting the ISS, which has hosted astronauts from 19 countries over the past 20 years. The station’s future beyond 2028 is uncertain. Its operations may yet be extended in the face of increasing Chinese competition. In its annual threat assessment this April, the office of the US Director of National Intelligence (DNI) described China as a “near-peer competitor” pushing for global power. It warns: “Beijing is working to match or exceed US capabilities in space to gain the military, economic, and prestige benefits that Washington has accrued from space leadership.” The Biden administration suspects Chinese satellites are being used for non-civilian purposes. The People’s Liberation Army integrates reconnaissance and navigation data in military command and control systems, the DNI says. “Satellites are inherently dual use. It’s not like the difference between an F15 fighter jet and a 737 passenger plane,” Hilborne says. Once China completes the Tiangong space station next year, it is likely to invite foreign astronauts to take part in missions. One goal: to build new soft-power alliances. Beijing says interest from other countries is enormous. The low Earth orbit station is part of an ambitious development strategy in the heavens rather than on land – a sort of belt and rocket initiative. According to Alanna Krolikowski, an assistant professor at the Missouri University of Science and Technology, a “bifurcation” of space exploration is under way. In one emerging camp are states led by China and Russia, many of them authoritarian; in the other are democracies and “like-minded” countries aligned with the US. Russia has traditionally worked closely with the Americans, even when terrestrial relations were bad. Now it is moving closer to Beijing. In March, China and Russia [announced plans to co-build an international lunar research station](https://www.theguardian.com/science/2021/mar/10/china-and-russia-unveil-joint-plan-for-lunar-space-station). The agreement comes at a time when Vladimir Putin’s government has been increasingly isolated and subject to western sanctions. In June, Putin and his Chinese counterpart Xi Jinping renewed a friendship treaty. Moscow is cosying up to Beijing out of necessity, at a time of rising US-China bipolarity. These rival geopolitical factions are fighting over a familiar mountainous surface: the moon. In 2019 a Chinese rover landed on its far side – a first. China is now planning a mission to the moon’s south pole, to establish a robotic research station and an eventual lunar base, which would be intermittently crewed. Nasa, meanwhile, has said it intends to put a woman and a person of colour on the moon by 2024. SpaceX has been hired [to develop a lander](https://www.theguardian.com/science/2021/apr/17/nasa-spacex-moon-spacecraft-elon-musk). The return to the moon – after the last astronaut, commander Eugene Cernan, said goodbye in December 1972 – would be a staging post for the ultimate “giant leap”, Nasa says: sending astronauts to Mars. Krolikowski is sceptical that China will quickly overtake the US to become the world’s leading spacefaring country. “A lot of what China is doing is a reprisal of what the cold war space programmes did in the 1960s and 1970s,” she said. Beijing’s recent feats of exploration have as much to do with national pride as scientific discovery, she says. But there is no doubting Beijing’s desire to catch up, she adds. “The Chinese government has established, or has plans for, programmes or missions in every major area, whether it’s [Mars](https://www.theguardian.com/science/mars) missions, building mega constellations of telecommunications satellites, or exploring asteroids. There is no single area of space activity they are not involved in.” “We see a tightening of the Russia-China relationship,” Krolikowski says. “In the 1950s the Soviet Union provided a wide range of technical assistance to Beijing. Since the 1990s, however, the Russian space establishment has experienced long stretches of underfunding and stagnation. China now presents it with new opportunities.” Russia is poised to benefit from cost sharing, while China gets deep-rooted Russian technical expertise. At least, that’s the theory. “I’m sceptical this joint space project will materialise anytime soon,” says Alexander​ Gabuev, a senior fellow at the Carnegie Moscow Centre. Gabuev says both countries are “techno-nationalist”. Previous agreements to develop helicopters and wide-bodied aircraft saw nothing actually made, he says. The Kremlin has been a key partner in managing and resupplying the ISS. US astronauts used Russian Soyuz rockets to reach the station, taking off from a cosmodrome in Kazakhstan, after the Space Shuttle programme was phased out. But this epoch seems to be coming to an end as private companies such as [SpaceX](https://www.theguardian.com/science/spacex) take over. “I expect US-Russian relations to get worse,” Gabuev says, adding that Americans “no longer need” Russia’s help. Moscow’s state corporation for space activities, Roscosmos, has faced accusations of being more interested in politics than space research. Last month the newspaper Novaya Gazeta reported that Roscosmos’s executive director of manned space programmes, former cosmonaut Sergei Krikalev, had been fired. His apparent crime: questioning an official decision to shoot a film on the Russian section of the ISS. The film, Challenge, is about a female surgeon operating on a cosmonaut in space, and has been backed and financed by Roscosmos . It stars Yulia Peresild, who is due to head to space in October with director Klim Shipenko. The launch seems timed to beat Tom Cruise, who is due to shoot his own movie on board the ISS with director Doug Liman[.](https://www.theguardian.com/science/2021/may/13/russia-send-actor-director-iss-shoot-first-movie-space) Krikalev, who spent more than 800 days in space and was in orbit when the USSR collapsed, apparently told Roscomos’s chief, Dmitry Rogozin, that the film was pointless. Rogozin – its co-producer – has called on the west to drop sanctions in return for Russia’s cooperation on space projects. Putin, Rogozin’s boss, appears to not be very interested in other planets, though, and is more concerned with [nature and the climate crisis](https://www.reuters.com/article/us-russia-putin-idUSKCN1LC1X0) these days. “Space is one of the areas that has traditionally transcended politics. The Mir space station worked at a time of east-west tensions. There was symbolic cooperation. Whether this will continue in the future is really up for debate,” Hilborne says. “The US is very sensitive about what happens in space.” Most observers think the US will remain the world’s pre-eminent space power, thanks to its innovative and flourishing private sector. China’s Soviet-style state programme appears less nimble. Despite ambitious timetables, and billions spent by Beijing, it is unclear when – or even if – an astronaut will return to the moon. The 2030s, perhaps? Will they be American or Chinese? Or from a third country? It may well be that the first person to boldly go again doesn’t merely represent a nation or carry a flag. More likely, they will emerge from a lunar lander wearing a spacesuit with a SpaceX logo on the back – a giant leap not only for mankind, but for galactic marketing.

#### Property rights key to investment in space – studies prove

CEA 21 Econ. Rept. 2021 - Chapter 8: Exploring New Frontiers In Space Policy And Property Rights. U.S. Government Publishing Office, 2021, https://www.govinfo.gov/content/pkg/ERP-2021/pdf/ERP-2021-chapter8.pdf, Accessed 10 Jan 2022. The Council of Economic Advisers (CEA) is a United States agency within the Executive Office of the President established in 1946, which advises the President of the United States on economic policy.

All the space policy developments discussed above have improved the ability of investors to set expectations for the manner in which benefits flow from investments in space. The historical examples given argue that further specifying property rights will bolster investment in the space economy. Increased investments in the space economy will lead to advances in space technology. In this subsection, we discuss the economics literature that addresses the effects of setting and strengthening property rights on both investment and economic growth. The research presented here aims to convey that the benefits for economic activity from improved setting of expectations that clarifies property rights is universal and not just due to specific circumstances of time and/or place. Losses from short-term decisionmaking. A growing concern for future space exploration activities arises from a lack of property rights security leading to short-term decisionmaking, which may inhibit long-term human activity. Many empirical studies show that insecure property rights lead to investment decisions with lower values. Many of these studies have come from analyses of water rights in the western United States. In what is known as the Prior Appropriation Doctrine, water rights are handed out based on a “first in time, first in right” principle. Given that the amount of water available changes each year due to precipitation patterns, water rights holders that were, earlier in time, known as senior rights holders are more likely to receive their water allocation each year than those that were later in time, known as junior rights holders. Leonard and Libecap (2019) argue that the Prior Appropriation Doctrine, with its clear rights for senior rights holders, allowed for investment in irrigation technologies. Given the climate of the western United States, large-scale investment in irrigation is required to maximize the productivity of large swaths of land. Leonard and Libecap estimate that 16 percent of western States’ income in 1930 is attributable to investments made in irrigation that would not have occurred without secure property rights. Another concern with insecure property rights is that owners of natural resources rush to extract them to ensure that they accrue the benefits of their investments. This rush to extract resources has a detrimental effect on the value obtained from those resources and other negative spillover effects on society. One example is the increase in the rate of deforestation that occurs when property rights for the land are insecure (Bohn and Deacon 2000). Ferreira (2004) finds that those countries with clearly defined property rights experience less deforestation than those with weaker protections. Kemal and Lange (2018) find that a reduced chance of oil well expropriation in Indonesia lowered the rate of extraction by up to 40 percent. If short-term decisionmaking prevails in the initial incursions into space, the future of the space economy could be seriously harmed. Depleting the resources necessary to sustain life in space would mean having to transport these resources from Earth at a prohibitive cost and complexity.

#### US space dominance prevents war with China – deters anti-satellite use and Taiwan intervention

Chow and Kelley 21 Chow, Brian, and Brandon Kelley. "China’S Anti-Satellite Weapons Could Conquer Taiwan—Or Start A War". The National Interest, 2021, <https://nationalinterest.org/feature/china%E2%80%99s-anti-satellite-weapons-could-conquer-taiwan%E2%80%94or-start-war-192135.Brian> Chow is an independent policy analyst (Ph.D. physics, MBA with Distinction, Ph.D. finance) with over 160 publications in space and other national security policies and Brandon Kelley

On July 1, 2021—the one-hundredth birthday of the Chinese Communist Party—[President Xi Jinping](https://asia.nikkei.com/Politics/Full-text-of-Xi-Jinping-s-speech-on-the-CCP-s-100th-anniversary) declared that China will “[advance peaceful national reunification](https://nationalinterest.org/blog/reboot/could-taiwan%E2%80%99s-terrain-stop-chinese-invasion-its-tracks-191919)” with Taiwan. It would be easy to dismiss such statements as mere political rhetoric: certainly, Taiwan would never willingly accede to Chinese demands to rejoin the fold. But China’s rapidly advancing anti-satellite (ASAT) capabilities could open up another avenue: deterring United States intervention on Taiwan’s behalf in order to coerce reunification without firing a shot. If current trends hold, then China’s [Strategic Support Force](https://ndupress.ndu.edu/Portals/68/Documents/stratperspective/china/china-perspectives_13.pdf) will be capable by the late 2020s of holding key U.S. space assets at risk. [Chinese military doctrine](https://nationalinterest.org/blog/reboot/nowhere-earth-will-be-safe-us-china-war-172523), statements by senior officials, and past behavior all suggest that China may well believe threatening such assets to be an effective means of deterring U.S. intervention. If so, then the United States would face a type of “Sophie’s Choice”: decline to intervene, potentially leading allies to follow suit and Taiwan to succumb without a fight, thereby enabling Xi to achieve his goal of “peacefully” snuffing out Taiwanese independence; or start a war that would at best be long and bloody and might well even cross the nuclear threshold. This emerging crisis has been three decades in the making. In 1991, China watched from afar as the United States used space-enabled capabilities to obliterate the Iraqi military from a distance in the first Gulf War. The People’s Liberation Army quickly set to work developing capabilities targeted at a perceived Achilles’ heel of this new [American way of war](https://nationalinterest.org/feature/secrets-and-lies-role-truth-great-power-information-warfare-170579): reliance on vulnerable space systems. This project came to fruition with a direct ascent [ASAT weapons test](https://fas.org/sgp/crs/row/RS22652.pdf) in 2007, but the test was limited in two key respects. First, it only reached low Earth orbit. Second, it generated thousands of pieces of long-lasting space junk, provoking immense [international ire](https://spacenews.com/u-s-official-china-turned-to-debris-free-asat-tests-following-2007-outcry/). This backlash appears to have taken China by surprise, driving it to seek new, more usable ASAT types with minimal debris production. Now, one such ASAT is nearing operational status: spacecraft capable of rendezvous and proximity operations (RPOs). Such spacecraft are [inevitable](https://www.airuniversity.af.edu/Portals/10/SSQ/documents/Volume-12_Issue-2/Chow.pdf#page=22) and cannot realistically be limited. The United States, European Union, China, and others are developing them to provide a range of satellite services essential to the [new space economy](https://www.morganstanley.com/ideas/space-economy-themes-2021), such as in situ repairs and refueling of satellites and active removal of space debris. But RPO capabilities are dual-use: if a satellite can grapple space objects for servicing, then it might well be capable of grappling an adversary’s satellite to move it out of its servicing orbit. Perhaps it could degrade or disable it by bending or disconnecting its solar panels and antennas all while producing minimal debris. This is [a serious threat](https://nationalinterest.org/feature/can-america-lose-china-189020), primarily because no international rules presently exist to limit close approaches in space. Left unaddressed, this lacuna in international law and space policy could enable a prospective attacker to pre-position, during peacetime, as many spacecraft as they wish as close as they wish to as many high-value targets as they wish. The result would be an ever-present possibility of sudden, bolt-from-the-blue attacks on vital space assets—and worse, on many of them at once. China has conducted at least [half a dozen tests of RPO](https://swfound.org/media/207179/swf_chinese_rpo_fact_sheet_apr2021.pdf#page=3) capabilities in space since 2008, two of which went on for years. Influential space experts have noted that these tests have plausible peaceful purposes and are in many cases similar to those conducted by the United States. This, however, does not make it any less important to establish effective legal, policy, and technical counters to their offensive use. Even if it were certain that these capabilities are intended purely for peaceful applications—and it is not at all clear that that is the case—China (or any other country) could at any time decide to repurpose these capabilities for ASAT use. There is still time to get out ahead of this threat, but likely not for much longer. China’s RPO capabilities have, thus far, lagged about five years behind those of the United States. There are reasons to believe this gap may close, but even assuming that it holds, we should expect to see China demonstrate an operational dual-use rendezvous spacecraft by around 2025. (The first instance of a U.S. commercial satellite docking with another satellite to change its orbit occurred in [February 2020](https://news.northropgrumman.com/news/releases/northrop-grumman-successfully-completes-historic-first-docking-of-mission-extension-vehicle-with-intelsat-901-satellite).) At the same time, China is expanding its capacity for rapid spacecraft manufacturing. The [Global Times](https://www.globaltimes.cn/page/202101/1213345.shtml) reported in January that China’s first intelligent mass production line is set to produce 240 small satellites per year. In April, [Andrew Jones](https://spacenews.com/china-is-developing-plans-for-a-13000-satellite-communications-megaconstellation/#:~:text=China%20is%20developing%20plans%20for%20a%2013%2C000%2Dsatellite%20megaconstellation,-by%20Andrew%20Jones&text=HELSINKI%20%E2%80%94%20China%20is%20to%20oversee,the%20country's%20major%20space%20actors.) at SpaceNews reported that China is developing plans to quickly produce and loft a thirteen thousand-satellite national internet megaconstellation. It is not unreasonable to assume that China could manufacture two hundred small rendezvous ASAT spacecraft by 2029, possibly more. If this happens, and Beijing was to decide in 2029 to launch these two hundred small RPO spacecraft and position them in close proximity to strategically vital assets, then China would be able to simultaneously threaten disablement of the entire constellations of U.S. satellites for missile early warning (about a dozen satellites with spares included); communications in a nuclear-disrupted environment (about a dozen); and positioning, navigation, and timing (about three dozen); along with several dozen key communications, imagery, and meteorology satellites. Losing these assets would severely degrade U.S. deterrence and warfighting capabilities, yet once close pre-positioning has occurred such losses become almost impossible to prevent. For this reason, such pre-positioning could conceivably deter the United States from coming to Taiwan’s aid due to the prospect that intervention would spur China to disable these critical space systems. Without their support, the war would be much bloodier and costlier—a daunting proposition for any president. Should the United States fail to intervene, the consequences would be disastrous for both Washington and its allies in East Asia, and potentially the credibility of U.S. defense commitments around the globe. Worse yet, however, might be what could happen if China believes that such a threat will succeed but proves to be wrong. History is rife with examples of major wars arising from miscalculations such as this, and there are many pathways by which such a situation could easily escalate out of control to a full-scale conventional conflict or even to nuclear use. This Catch-22 of so-called “peaceful reunification” on the one hand and catastrophic miscalculation on the other is entirely preventable. To do so, however, the United States must act now. To deter such pre-positioning and provide a clear framework for how to handle it if it does occur, the United States should immediately begin coordinating with its allies to establish shared understandings for the rules and operations of [warning](http://npolicy.org/article_file/Space_and_Missile_Wars.pdf#page=136)/[self-defense](https://www.airuniversity.af.edu/Portals/10/SSQ/documents/Volume-14_Issue-4/Chow.pdf#page=5) zones in orbit. Additionally, the United States should develop and deploy [bodyguard spacecraft](https://www.airuniversity.af.edu/Portals/10/SSQ/documents/Volume-14_Issue-4/Chow.pdf#page=6) to monitor and enforce such rules. The United States cannot afford to wait; once the potential threat arrives, it will already be too late.

#### US-China war goes nuclear – leads to power vacuum, econ collapse and extinction

Sharman 17 (Jon Sharman, “US would go into any war with China with 'unparalleled violence', warn experts’” 2017. The Independent. February 5, 2017. http://www.independent.co.uk/news/world/americas/us-china-war-be-end-of-life-earth-nuclear-weapons-apocalypse-steve-bannon-donald-trump-white-house-a7561821.html.)

While the prospect remains relatively remote, experts have told The Independent they believe such a conflict would be catastrophic, throwing the entire globe into turmoil and potentially ending "life as we know it on Earth". The United States would likely win because sending China's untested forces against the might of America's military would be like pitching farmers against Achilles and his warriors, said one, but even a conventional military victory would be a strategic disaster. It would set off a global economic crisis and create a potential power vacuum inside defeated China "the like of which we can't imagine". Mr Bannon said war would erupt in the South China Sea in "five to 10 years". He said: "They’re taking their sandbars and making basically stationary aircraft carriers and putting missiles on those. They come here to the United States in front of our face—and you understand how important face is—and say it’s an ancient territorial sea." The US and China have been engaged in a back-and-forth dispute over military build-up and territorial claims in the region for some years. In December the US said it would base its deadliest fighter jets in Australia, and days later China seized an unmanned US Navy drone. It followed a diplomatic spat around then-President-elect Trump's congratulatory phone call with Taiwan's Prime Minister Tsai Ing-wen, which broke with decades of US policy. Mr Trump has been forthright about China's influence, blaming it for the loss of American jobs. The war of words recently heated up when a Chinese military official was quoted as saying talk of war with the US under Mr Trump "are not just slogans, they are becoming a practical reality". Trevor McCrisken, associate professor of politics and international studies at the University of Warwick, said that if war broke out "we would be looking, I would imagine, at World War Three". He said: "I really do think that would be the end of life as we know it on Earth. "From a global strategic risk level I would say the last thing you want is war between the United States and any of the major powers because of the risks of escalation, obviously the potential for nuclear weapons to be used. The likelihood of nuclear exchange between the two principals involved is high."

# Case

## OV

#### Their skepticism of tech is inherently problematic. This type of thinking results in anti-science movements like the climate deniers and anti-vaxxers who threaten extinction for us outside of debate. This is an independent voter because their discourse and ideology leads to violence in the real world.

#### Non-unique - technological advancement into space will be done by governments.

#### Non-unique – if technological advancement doesn’t expand into space it will expand somewhere else triggering the impacts.

#### Their impacts are so vague – literally just says that tech will lead to extinction. Vote neg on the clearly delineated impact instead of vague non-impact.

#### Turn – tech is good. Advancements in tech have lifted people out of poverty, staved off famine with GMOs, increased access to medicine, saved lives with vaccines and treatement, ect. Reject the ivory tower theorization isolated from suffering that has been alleviated through tech.

#### Climate change requires a technological solution that only capitalism can provide---renewables are outpacing fossil fuels and will complete the transition to green growth.

**Smith ’19** (Noah; assistant professor of finance at Stony Brook University; April 5th; “Dumping Capitalism Won’t Save the Planet”; <https://www.bloomberg.com/opinion/articles/2019-04-05/capitalism-is-more-likely-to-limit-climate-change-than-socialism>) --

The climate threat is certainly dire, and carbon taxes are unlikely to be enough to solve the problem. But eco-socialism is probably not going to be an effective method of addressing that threat. Dismantling an entire economic system is never easy, and probably would touch off armed conflict and major political upheaval. In the scramble to win those battles, even the socialists would almost certainly abandon their limitation on fossil-fuel use — either to support military efforts, or to keep the population from turning against them. The precedent here is the Soviet Union, whose multidecade effort to reshape its economy by force amid confrontation with the West led to profound environmental degradation. The world's climate does not have several decades to spare. Even without international conflict, there’s little guarantee that moving away from capitalism would mitigate our impact on the environment. Since socialist leader Evo Morales took power in Bolivia, living standards have improved substantially for the average Bolivian, which is great. But this has come at the cost of higher emissions. Meanwhile, the capitalist U.S managed to decrease its per capita emissions a bit during this same period (though since the U.S. is a rich country, its absolute level of emissions is much higher). In other words, in terms of economic growth and carbon emissions, Bolivia looks similar to more capitalist developing countries. That suggests that faced with a choice of enriching their people or helping to save the climate, even socialist leaders will often choose the former. And that same political calculus will probably hold in China and the U.S., the world’s top carbon emitters — leaders who demand draconian cuts in living standards in pursuit of environmental goals will have trouble staying in power. The best hope for the climate therefore lies in reducing the tradeoff between material prosperity and carbon emissions. That requires technology — solar, wind and nuclear power, energy storage, electric cars and other vehicles, carbon-free cement production and so on. The best climate policy plans all involve technological improvement as a key feature. Recent developments show that the technology-centered approach can work. A recent report by Bloomberg New Energy Finance analyzed about 7000 projects in 46 countries and found that large drops in the cost of solar power from photovoltaic systems, wind power and lithium-ion batteries have made utility-scale renewable electricity competitive with fossil fuels. A 76 percent decline in the cost of energy for short-term battery storage since 2012 is especially important. In a blog post, futurist and energy writer Ramez Naam underscores the significance of these developments. Naam notes the important difference between renewables being cheap enough to outprice new fossil-fuel plants and being inexpensive enough to undercut existing plants. The former is already the case across much of the world, which is among the reasons for an 84 percent decrease in the number of new coal-fired plants worldwide since 2015. But when it becomes cheaper to scrap existing fossil-fuel plants and build renewables in their place, it will allow renewables to start replacing coal and gas much more quickly. Naam cites examples from Florida and Indiana where this is already being done. He cites industry predictions that replacing existing fossil-fuel plants with renewables will be economically efficient almost everywhere at some point in the next decade. Electricity is far from the only source of carbon emissions — there’s also transportation, manufacturing (especially of steel and cement), home and office heating, and agriculture to worry about. But the rapid advance of solar technology is a huge victory in the struggle against climate change, because it will allow people all over the world to have electricity without cooking the planet. And how was this victory achieved? A combination of smart government policy and private industry. Massachusetts Institute of Technology researchers Goksin Kavlak, James McNerney and Jessika Trancik in a recent paper evaluated the factors behind the solar-price decline from 1980 to 2012. They concluded that from 1980 to 2001, government-funded research and development was the main factor in bringing down costs, but from 2001 to 2012, the biggest factor was economies of scale. These economies of scale were driven by private industry increasing output, but with government subsidies helping to increase the incentive to ramp up production.

#### Free markets key to solve disease cures

**Jackson 16.** Kerry, Pacific Research Institute; 12/19/16; Free Market Policies Needed To Incentivize Creation Of New Life-Saving Treatments; <https://www.pacificresearch.org/article/free-market-policies-needed-to-incentivize-creation-of-new-life-saving-treatments/> --

 “Our strongest antibiotics don’t work and patients are left with potentially untreatable infections,” Director Dr. Tom Frieden said when the CDC issued its warning. He asked doctors, hospitals and public health officials to “work together” to “stop these infections from spreading.” The 2014 Report to the President expressed a similar concern: “The evolution of antibiotic resistance is now occurring at an alarming rate and is outpacing the development of new countermeasures capable of thwarting infections in humans. This situation threatens patient care, economic growth, public health, agriculture, economic security and national security.” For those thinking this sort of thing shouldn’t be happening when medical science is more advanced than can almost be conceived, be assured that it is. And unless there are public policy interventions, it’s likely to get worse. “More and more microorganisms will continue to gain resistance to the current drug therapies because (antimicrobial resistance, or AMR) is basic evolution,” Wayne Winegarden writes in the Pacific Research Institute’s newly-released report “Incenting the Development of Antimicrobial Medicines to Address the Problem of Drug-Resistant Infections.” The International Federation of Pharmaceutical Manufacturers says the problem is caused by “a dearth of new antibiotic medicines.” At the same time that there’s been an increase in AMR, there has been “a sharp decline in the development of new antibiotic medicines.” The group reports that only two new classes of antibiotics have been discovered in the last three decades compared to 11 in the previous 50 years. The answers to many medical problems are still not within reach of researchers. But the hazards of AMR can be diminished. Winegarden suggests we begin with public health campaigns that encourage handwashing, which he calls a highly effective and low-cost way to reduce the spread of infection. He further recommends policy that would address the problem of antibiotic overuse and greater use of vaccines to cut the incidents of infection. But Winegarden’s primary concern is **establishing the correct incentives for developing new antimicrobial medicines that would be effective against AMR microorganisms**. He’s specifically referring to policies “based on a thorough understanding of the disincentives that are currently inhibiting their development.” “These disincentives are well-recognized,” he writes. “Despite the medical need, and despite the generally strong return on investment for many other drug classes, the return on investment for developing new antimicrobial medicines (particularly antibiotics) is too low.” Producing a new drug is a grinding and expensive endeavor. It can take 10 to 15 years to develop a single prescription drug that is introduced to the market, and a company can spend as much as $5.5 billion on research and development for each medication that is eventually approved and prescribed. Less than 2 percent of all projects launched to create new drugs succeed. This is not an environment in which pharmaceutical companies can get too amped up about pursuing new treatments. Yet new drug approvals increased over the last decade. Don’t look for a surge of antimicrobial drugs in that pipeline, though. Winegarden says that particular drug class is among several that “face unique impediments” that serve as disincentives for innovation. To overcome the steep hill that impedes the development of new AMR drugs, **lawmakers must implement policies that unleash the incentives of the free market**. Policymakers also should look at the 1983 federal Orphan Drug Act and its market-oriented reforms that increased the number of drugs developed to treat rare diseases. More than 400 have been introduced to the market since the law was enacted, compared to fewer than 10 in the 1970s. Put another way, government needs to remove its anchors from the process and let the market do what it does so well. In this case, that’s restoring patients’ health, enriching innovative companies that create jobs, and inspiring biotech start-ups such as the group of Stanford undergraduates that has been capitalized to develop new antibiotics. If the proper incentives are in place, the needed treatments will follow.

#### Pandemics end civilization – no burnout

**Kerscher 14.** Karl-Heinz, professor and management consultant “Space Education”, Wissenschaftliche Studie, 2014

The death toll for a pandemic is equal to the virulence, the deadliness of the pathogen or pathogens, multiplied by the number of people eventually infected. It has been hypothesized that there is an upper limit to the virulence of naturally evolved pathogens. This is because a pathogen that quickly kills its hosts might not have enough time to spread to new ones, while one that kills its hosts more slowly or not at all will allow carriers more time to spread the infection, and thus likely out-compete a more lethal species or strain. This simple model predicts that if virulence and transmission are not linked in any way, pathogens will evolve towards low virulence and rapid transmission. However, this assumption is not always valid and in more complex models, where the level of virulence and the rate of transmission are related, high levels of virulence can evolve. The level of virulence that is possible is instead limited by the existence of complex populations of hosts, with different susceptibilities to infection, or by some hosts being geographically isolated. The size of the host population and competition between different strains of pathogens can also alter virulence. There are numerous historical examples of pandemics that have had a devastating effect on a large number of people, which makes the possibility of global pandemic a realistic threat to human civilization.