# 1AR

#### ] No link—aff only occurs for debris which solves the impact because it encourages safer innovation that won’t produce debris that will doom future innovation. Link evidence isn’t reverse causal since it says space could drive new innovations NOT the opposite.

#### 2] Public commercialization solves since governments can claim property. No private entity key warrant zaps uniqueness to zero. Contracting solves—governments can buy private entity innovation for money which encourages safer operations that won’t produce debris since governments don’t have economic motive to send unsafe satellites to space.

#### 3] Framing issue—tech innovation like satellites doesn’t matter if debris makes space unusable which turns the DA on stigma since people will be disincentivized economically to launch satellites that get destroyed by debris.

#### 4] Laundry list impacts bad since no defined terminal impact OR internal links to them—punish sloppy debate.

#### 5] Non-unique—premature commercial space dooms innovation. Specifically, failures because of debris turns innovation.

Chai 21 – Sen, 10/11/21, Professor of management at ESSEC Business School. Her research examines the entire developmental course of creative innovations from idea conception to commercialization, with the goal of helping managers and policymakers avoid failures and errors, better support innovation and increase organizations'chances of creating commercially successful ideas, [“WHAT HAPPENS AFTER AN INNOVATION FAILS? THE CASE OF VIRGIN GALACTIC’S 2014 TEST FLIGHT CRASH,” <https://knowledge.essec.edu/en/innovation/after-innovation-fails-the-case-of-virgin-galactic.html>] Justin

Yet since the innovation in question is so new and uncertain, these firms are vulnerable to failure. This includes small-scale failure, such as those that occur at the prototype stage and are a fairly normal part of the process, but also catastrophic innovation failure: a major failure that happens in the public eye, unexpected, costly, or is some combination of the three (Vaughan 1990). Dr. Chai and her colleagues were interested in how exactly this kind of failure impacted organizational and industry legitimacy in new sectors, in this case the space industry, positing that it can cause a legitimacy jolt. They studied one case in particular: the aforementioned 2014 crash of Virgin Galactic’s SpaceShipTwo, which killed one pilot, injured a second, and resulted in the loss of technology. Virgin Galactic is a major player in the nascent commercial space industry and specifically in space tourism, meaning it aims to send people to space for recreational purposes. In doing so, it’s engaging in radical innovation, as past space races have focused on sending professional astronauts to space with technology produced by government agencies like NASA in the United States rather than by private companies. The commercial space industry also includes for-profit activities such as sending satellites into space and space mining, with other major players being SpaceX (founded by Tesla’s Elon Musk) and Blue Origin (founded by Amazon’s Jeff Bezos).

# Churchill R3 – 1AC v Westwood EG

### Framing

#### Practical reason constrains everything:

#### [1] Postulation – reason is a prior question to evaluation of ethics since anything else collapses on itself as we can infinitely question our foundations otherwise but raising the question of reason proves itself valuable as it necessitates reason.

#### [2] Epistemology – rational deliberation of educational concepts is necessary to interpret other arguments since it’s a prerequisite to interpreting epistemological concepts and it’s the terminal impact of debate as education is the only portable impact.

#### [3] Procedure – reason is a side constraint on debate since otherwise we can’t refute – responding to this concedes the authority of reason since you’re reasoning via logical deliberation.

#### Freedom follows:

#### [1] We could not hold agents responsible for their actions if we did not assume them to have the freedom to control their actions for themselves.

#### [2] Freedom implies our actions occur after practical deliberation if it were retrospective, then we could claim that any and all events that happened before we decided to do something were part of our free action which is incoherent.

#### Moral law follows – it stems uniquely from reason and not from empiricism. That outweighs – a) if morality were based on things like desires then it would be imposed on us from the outside and we could not be said to be free b) anything else is non-binding and arbitrary since empiricism is always subject to change, i.e. my hair is brown is a true statement but it could be false in a week c) an evil demon could deceive us or we could be dreaming which proves the only viable metric to guide action begins a priori d) past experiences have no effect on causality or internal link to continuity, i.e. raining yesterday doesn’t mean rain today.

#### Duty of right is impossible in state of nature:

#### [1] Ethical disagreements are inevitable because individuals have different areas of self-interest and desire. Only a non-arbitrary shared authority that can resolve disputes of interpretation resolves this problem.

#### [2] Claims to freedom and property are solely to peer discretion since empirical features of compliance are temporal and nonbinding – only the unification of will solves.

#### Thus, the standard is consistency with the categorical imperative. Prefer additionally:

#### [1] Performativity—freedom is the key to the process of justification of arguments. Willing that we should abide by their ethical theory presupposes that we own ourselves in the first place. Thus, it is logically incoherent to justify a standard without first willing that we can pursue ends free from others.

#### [2] Weighing practices is incoherent because it relies on an assessment of ends, which relies on a further assessment. A practice that negates is not contradictory to a practice that affirms, and thus proving my end affirms is sufficient. So, proving the converse of the resolution is not sufficient to disprove the resolution’s truth.

#### [3] Ethical frameworks are topicality interpretations of the word ought so they must be theoretically justified. Prefer on resource disparities—focusing on evidence and statistics privileges debaters with the most preround prep excluding lone-wolfs who lack huge evidence files. A debater under my framework can easily be won without any prep since minimal evidence is required. That controls the internal link to other voters because a pre-req to debating is access to the activity.

**[4] Consequences fail: [A] They only judge actions after they occur, which fails action guidance [B] Every action has infinite stemming consequences, because every consequence can cause another consequence. Probability doesn’t solve because 1) Probability is improvable, as it relies on inductive knowledge, but induction from past events can’t lead to deduction of future events and 2) Probability assumes causation, we can’t assume every act was actually the cause of tangible outcomes [C] Every action is infinitely divisible, only intents unify action because we intend the end point of an action – but consequences cannot determine what step of action is moral or not. [D] You can’t aggregate consequences, happiness and sadness are immutable – ten headaches don’t make a migraine**

### Advocacy

#### Thus, the plan – Resolved: The appropriation of outer space by private entities is unjust. Definitions and enforcement in the doc and I’ll clarify in cross.

To clarify we’ll defend implementation and a revision to the Outer Space Treaty that explicitly bans appropriation of outer space by private entities

#### Private entities are non-governmental.

Dunk 11 – Frans G. von der Dunk, 2011, [“The Origins of Authorisation: Article VI of the Outer Space Treaty and International Space Law,” University of Nebraska] Justin

4. Interpreting Article VI of the Outer Space Treaty One main novel feature of Article VI stood out with reference to the role of private enterprise in this context. Contrary to the version of the concept applicable under general international law, where “direct state responsibility” only pertained to acts somehow directly attributable to a state and states could only be addressed for acts by private actors under “indirect,” “due care”/“due diligence” responsibility,18 Article VI made no difference as to whether the activities at issue were the state’s own (“whether such activities are carried on by governmental agencies” . . .) or those of private actors (. . . “or by non-governmental entities”). The interests of the Soviet Union in ensuring that, whomever would actually conduct a certain space activity, some state or other could be held responsible for its compliance with applicable rules of space law to that extent had prevailed. However, the general acceptance of Article VI as cornerstone of the Outer Space Treaty unfortunately was far from the end of the story. Partly, this was the consequence of key principles being left undefined.

#### Exemptions destroy the coercive power of legal regimes – causes circumvention across the board.

Hickman and Dolman 2 – John and Everett, 2002, Associate professor in the Department of Government and International Studies at Berry College in Mt. Berry, [“Resurrecting the Space Age: A State–Centered Commentary on the Outer Space Regime,” Volume 21 Number 1, <https://doi.org/10.1080/014959302317350855>] Elmer Recut Justin

Thus a state party need merely announce its intention to withdraw and then wait one year. Withdrawal of a single state party to the treaty, however, would not necessarily terminate the treaty between the other state parties. Yet, the decision of an important state not to be bound by a regime–creating treaty obviously endangers the entire treaty. The decision of the United States or China to withdraw from the OST would have far greater implications for the survival of the international space regime than the same decision by Bangladesh, Burkina Faso, or Papua New Guinea—the equality of states under international law remains nothing more than a useful  ction. For the OST to remain good international law, it must be accepted as such by the major space faring states of the 21st Century: the United States, Russia, the European Union, Japan, and China. One defection from the regime by a member of this group would no doubt lead to its effective collapse, as the remaining space faring states are unlikely to use the kind of coercion necessary to enforce the regime. A more likely response to such a defection is a scramble to make similar claims to sovereignty, based on historical precedent and effective occupation. Similar rushes to stake claims for territory sovereignty in other celestial bodies might follow.

### Offense

#### [1] Privatization is bad

#### [a] The OST prevents state-based sovereignty claims in space. But it does not clearly restrict corporations and even if it does it may imminently be changed. This means that regions could be under the exclusive control of corporations, while no government has authority.

Ward 19 Peter Ward (Peter Ward studied journalism at the University of Sheffield before moving to Dubai, where he reported on the energy sector. After three years in the Middle East, he earned his master’s degree in business journalism from the Columbia University Graduate School of Journalism. His work has appeared in GQ, Bloomberg Buisnessweek, The Economist, and Newsweek. He lives in New York City.) “The unintended consequences of privatising space,” ScienceFocus (Online version of BBC Science Focus Magazine). Nov. 6th, 2019. <https://www.sciencefocus.com/space/the-unintended-consequences-of-privatising-space/> SJMS

Imagine a colony on [the Moon](https://www.sciencefocus.com/tag/the-moon/) or [Mars](https://www.sciencefocus.com/space/mars-facts-figures-fun-questions-red-planet/) run by a corporation. That one company would control everything the colonists need to survive, from the water to the oxygen to the food. That’s a dangerous amount of power for any company, but it’s a very real scenario. So what stops a major corporation landing on the Moon and setting up a colony? One very old document. [The Outer Space Treaty](http://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/outerspacetreaty.html) was signed in 1967 by all of the major space-faring nations, and explicitly states nobody can go to another planet or the Moon and claim that territory for their own. It’s a very important document, but it’s flawed. For one thing, the private space sector wasn’t around when the treaty was written so it’s not clear how some of the rules would be applied to private companies. And secondly, given the ambitions of many countries and corporations, there’s no way it’s going to last much longer. Anyone with a plan to land on the Moon or Mars and stay there is going to run into the Outer Space Treaty, and the smart money is on the wealthy and powerful winning out against an old loophole-ridden document. Politicians such as Ted Cruz in the United States have [already called for changes](https://spacenews.com/cruz-interested-in-updating-outer-space-treaty-to-support-commercial-space-activities/) to be made to the treaty, and given the increasing amounts of money private space companies spend on lobbying in the United States, more such attempts will follow. It’s imperative that the space community as a whole takes this issue on to ensure the needs of all, and not just the private sector, are taken into account should any alterations be made. The further we look into the future of humans in space, the more reality resembles science fiction. That’s why it’s difficult to make people take the issues which could potentially arise seriously. But now is the time to consider the problems that could arise from a commercially-led space race, and take the necessary small steps now to avoid potentially disastrous consequences in the future.

#### [b] That’s an instance of a unilateral will governing individuals while universal decision making is absent. This is an unjust state which violates people’s freedoms and violates the categorical imperative.

Cordelli 16 Chiara Cordelli [Chiara Cordelli is an associate professor in the Department of Political Science at the University of Chicago. Her main areas of research are social and political philosophy, with a particular focus on theories of distributive justice, political legitimacy, normative defenses of the state, and the public/private distinction in liberal theory. She is the author of The Privatized State (Princeton University Press, 2020), which was awarded the 2021 ECPR political theory prize for best first book in political theory. She is also the co-editor of, and a contributor to, Philanthropy in Democratic Societies (University of Chicago Press, 2016). -- [cordelli@uchicago.edu](mailto:cordelli@uchicago.edu)] “WHAT IS WRONG WITH PRIVATIZATION?”, University of Chicago, Political Science & the College, https://www.law.berkeley.edu/wp-content/uploads/2016/01/What-is-Wrong-With-Privatization\_UCB.pdf

The intrinsic wrong of privatization, I will suggest, rather consists in the creation of an institutional arrangement that, by its very constitution, denies those who are subject to it equal freedom. I understand freedom as an interpersonal relationship of reciprocal independence. To be free is not to be subordinated to another person’s unilateral will. By building on an analytical reconstruction of Kant’s Doctrine of Right, I will argue that current forms of privatization reproduce (to a different degree) within a civil condition the very same defects that Kant attributes to the state of nature, or to a pre-civil condition, thereby making a rightful condition of reciprocal independence impossible. Importantly, this is so even if private actors are publicly authorized through contract and subject to regulations, and even if they are committed to reason in accordance with the public good. The reason for this, as I will explain, derives from the fact that private agents are constitutionally incapable of acting omnilaterally, even if their actions are omnilaterally authorized by government through some delegation mechanism, e.g. a voluntary contract. Omnilateralness, I will suggest, must be understood as a function of 1) rightful judgment and 2) unity. By rightful judgment I mean the capacity to reason publicly and to make universal rules that are valid for everyone, according to a juridical ideal of right, as necessary to solve the problem of the unilateral imposition of private wills on others. By unity I mean the capacity to make rules and decisions that change the normative situation of others, as a part of a unified system of decision-making. The condition of unity is crucial, as I shall later explain, insofar as there might be multiple interpretations compatible with rightful judgment, which would still problematically leave the definition of people’s rightful entitlements indeterminate. Further, the practical realization of the juridical idea of an omnilateral will, I will contend, requires embeddedness within a shared collective practice of decision-making. In practice, rightful judgment can only obtain when certain shared background frameworks that structure practical reasoning and confer unity to that reasoning are in place. The rules of public administration and the authority structure of bureaucracy should be understood as playing this essential function of giving empirical and practical reality to the omnilateral will, as far as the execution of rules and the concrete definition of entitlements are concerned. Together, these two requirements are necessary, (whether they are also sufficient is a different question), to make an action the omnilateral action of a state, which has the moral power to change the normative situation of citizens, by fixing the content of their rights and duties in accordance with the equal freedom of all. The phenomenon of privatization thus raises the fundamental questions of why we need political institutions to begin with, and what makes an action an action of the state. Insofar as private agents make decisions that fundamentally alter the normative situation (the rights and duties) of citizens, and insofar as, by definition, private agents are not public officials embedded in that shared collective practice, their decisions, even if well intentioned and authorized through contract, cannot count as omnilateral acts of the state. They rather and necessarily remain unilateral acts of men. Hence, I will conclude, for the very same reasons that we have, following Kant, a duty to exit the state of nature so as to solve the twofold problems of the unilateral imposition of will on others and the indeterminacy of rights, we also have a duty to limit privatization and to support, on normative grounds, a case for the re-bureaucratization of certain functions. Therefore, my paper provides foundational reasons to agree with Richard Rorty’s nonfoundational defense of bureaucracy as stated in the opening epigraph, since only agents who are appropriately embedded within a bureaucratic structure, properly understood, are, in many cases, capable of acting omnilaterally. The “bosses” I am here concerned with are not primarily those who can unilaterally impose their will on us in their capacity as private employers, but rather any private actor who acts unilaterally while in the garb of the state. This essay is structured as follows. In Section I, I assess and reject what I take to be the most powerful non-instrumental arguments against privatization. In Section II, through an interpretation of Kant, I explain in what sense the state, defined as an omnilateral system of rules, is a constitutive condition of freedom, rather than merely an instrument to promote it. In Section III, through an analytical reconstruction, based on a theory of collective action, of the conditions that make a system of rules an omnilateral system of laws rather than an aggregation of unilateral acts of men, I show that privatization constitutes a regression to the state of nature, understood as a normative condition of unfreedom. I then present some reflections on the broader implications of my argument, as it posits an expansive conception of the juridical order as an appropriate object of analysis for political philosophy. Before moving to the next section, let me first clarify what I mean by privatization. In a general sense, privatization can be defined as the devolution of public responsibilities to private actors. This however entails a baseline against which the idea of public responsibilities must be specified. Here I defend a normative, rather than, as is commonly the case, a historical or economic baseline.11 I will assume that in a just society government ought to bear, on grounds of justice, the primary responsibility to secure not only a fair distribution of general resources, including income and wealth, through tax and transfers, but also an adequate provision of particular in-kind goods, including police protection, defense, criminal justice, education and healthcare.12 This does not per se entail, however, that government should provide these goods directly. Government may fund the production of in-kind goods, while delegating their provision to private actors. I thus define privatization as the implementation of public, justice-based responsibilities through private agents.

#### [2] Extending neoliberal polices in space violate universal law through continued injustice.

Segobaetso 18 Segobaetso, Benjamin. *Ethical Implications of the Colonization, Privatization and Commercialization of Outer Space*. SJEP

It can be argued through Kantian ethics that our record here on Earth paints a picture of neoliberal and capitalist policies with tendencies to favour the highest bidder at the exclusion of the under privileged and puts profit first at the expense of the environment. For Kantians, there are two questions that we must ask ourselves whenever we decide to act: (i) Can I rationally will that everyone act as I propose to act? If the answer is no, then we must not perform the action. (ii) Does my action respect the goals of human beings? Again, if the answer is no, then we must not perform the action. Kantian ethicists would argue that extending to space neoliberal and capitalist policies is immoral because these systems create economic disparities and life threatening environmental injustices; therefore, they are set up in a way that we could not rationally will everyone to act the way they act either here on Earth or in space. Also, Kantian ethicists would ask whether the action of extending neoliberal and capitalist policies to space would respect the goals of extra-terrestrial intelligent life if any rather than merely using them for humans’ own purposes? If the answer is no, then the participating agent must not perform the action. Kant wrote on the possible existence of extra-terrestrial intelligent species in the final pages of the last book that he published, Anthropology from a Pragmatic Point of View [Anthropologie in pragmatischer Hinsicht] (1978). In this publication, Kant hinted that the highest concept of the Alien species may be that of a terrestrial rational being [eines irdischen vernünftigen ]; however, he argued that it will be difficult to describe its characteristics because there is no knowledge available of a non-terrestrial rational being [nicht irdischen Wesen] which could be used as a reference in regards to its properties and ultimately classify that terrestrial being as rational. This dilemma will continue until extraterrestrial intelligent life is discovered because comparing two species of rational beings has to be on the basis of experience, but that experience has not been possible yet (Kant, 237-238). In applying Kant’s deontological moral theory, it must first be recognized that Kant visualized a kind of respect in which we all can recognize every rational being exists as an end in itself (1) as being not fully comprehensible by any human understanding, (2) as being an end in him- or herself, and (3) as being a potential source of moral law (Kant, 2012). In this regard, since Kant insinuated that the highest concept of the extraterrestrial intelligent species may be that of a terrestrial rational being [eines irdischen vernünftigen ]; that implies any encounter with extra-terrestrial intelligent life will compel us under the deontological moral theory to recognize that life as being not fully comprehensible by any human understanding, as being an end in itself, and as being a potential source of moral law (Kant, 2012). It must be realized that Kant’s deontology theory does not go without criticism by critical theorists who believe in dismantling all systems of oppression.

#### [3] The categorical imperative rejects states and companies desires to profit off of space for themselves.

Wurth 19Wurth, Nicolas. “SPACE ETHICS IN INTERNATIONAL SPACE LAW: ADVANCEMENT AND ENFORCEABILITY.” *University of Luxembourg* , 2019. SJEP

Hans Jonas, german philosopher, studied the concept of ethics related to Kant’s “Categorical Imperative” under the angle of modern technology allowing humans to surpass their own frontiers.10 By extending the aforementioned Categorical Imperative to modern technologies, (which includes space activities) he wrote: “Act that the effects of your action are compatible with the permanence of genuine human life. [...] Act so that the effects of your action are not destructive of the future possibility of such life [...] Do not compromise the conditions for an indefinite continuation of humanity on earth.”11 The conceptualization of ethics implies to evaluate behavior, actions and activities of space actors.12 Related to space activities, ethical behavior shall therefore be aligned with a sort of conduct that is to be followed, independently of “any natural desires.” Such an understanding does naturally challenge States’ desires to diversify their economy via the adoption of a legal framework on space activities13 or the profit-making goal of a company which has the technical ability to conduct a profitable space activity such as space-mining?

### Underview

#### [1] Permissibility and presumption affirm: [A] Negating an obligation requires proving a prohibition – they prohibit the aff action. [B] If agents had to reflect on every action they take and justify why it was a good one we would never be able to take an action because we would have to justify actions that are morally neutral ie drinking water is not morally right or wrong but if I had to justify my action every time I decided upon a course of action I would never be able to make decisions.

**[2] Aff gets 1AR theory and RVIs – otherwise the neg can be infinitely abusive and there’s no way to check against this**

**1AR theory is drop the debater, competing interps, and the highest layer of the round – [A] the 1ARs too short to be able to rectify abuse and adequately cover substance which justifies evaluating the debate after the 1AR to alleviate time skew, [B] the 2NR has 6 minutes to win a shell and beat back mine, while the 2AR has 3 minutes and must heg their bets on something**

#### If I win one layer, vote aff a) they have 7 minutes to uplayer and nullify my offense b) forces engagement with the aff since they have to defend all arguments which means they read better ones. All neg interps are counter interps since the aff takes an implicit stance on every issue which means you need an RVI to become offensive. No RVIs because aff speeches are too short to develop offense that’s not no risk.

#### You should accept all aff interps and assume I meet neg theory since the aff speaks in the dark and I have to take a stance on something, you can at least react and adapt. No neg combo shells since they destroy substantive debate because no matter how fair I am you can always find a violation and avoid clash. Reject 1NC responses– you’re psychologically skewed to believe them because the 1NC is longer. Reject meta-theory – it’s infinitely regressive and never resolves abuse.

#### No 2NR paradigm issues, theory, or RVIs because a) It becomes impossible to check NC abuse if you can dump on reasons the shell doesn't matter in the 2n. and b) they have 6 minutes to go for them whereas I only have a 3 minute 2AR to respond so I get crushed on time skew.

#### No new 2NR responses – it leads to infinite sandbagging and avoids clash since they have 6 minutes – also infinite abuse since the short 1AR is premised off 1NC concessions.

#### [3] Affirming is harder – link turns all neg theory arguments and means we get a permutation against anything because we can’t sufficiently respond A] Neg is reactive – they tailor the 1NC before the round to exploit the aff’s weakness. Not reciprocal – affs enter the round unaware. Also means no neg weighing – it supercharges the abuse since they can collapse in the 2NR and outweigh any turns I make. B] Aff extends twice – takes valuable time from already most time-pressed speeches. That means reject neg fairness concerns – the aff is structurally skewed from the start so they have no excuse – responding to this assumes you get neg fairness which is your fault because you introduced the contradiction so you still vote aff. C] 1AR is split between multiple layers while the 2NR goes for one thing – we get destroyed on time skew.

### Advantage

#### The advantage is Debris:

#### Privatization of space is unsustainable and increases debris – triggers the Kessler Syndrome

Thompson 21 [Clive, 11/17/21, Clive Thompson is a contributing writer for the New York Times Magazine, a columnist for Wired and Smithsonian magazines, and a regular contributor to Mother Jones. He’s the author of Coders: The Making of a New Tribe and the Remaking of the World, and Smarter Than You Think: How Technology is Changing our Minds for the Better. He’s @pomeranian99 on Twitter and Instagram, “Get Ready for the “Kessler Syndrome” to Wreck Outer Space,” OneZero, <https://onezero.medium.com/get-ready-for-the-kessler-syndrome-to-wreck-outer-space-7f29cfe62c3e>] Justin

Back in 1978, the astrophysicist Donald Kessler made an alarming prediction: Space junk could wreck our ability to keep satellites aloft. In a fascinating paper, Kessler noted that “low earth orbit” — a region between 99 miles and 1,200 miles up — was getting pretty crowded. In 1978 there were already 3,866 objects being tracked in space. That included satellites used by scientists (say, to monitor weather) or spy agencies. It also included a lot of debris: Every time a rocket launches a satellite into orbit, it tends to leave stray bits of material. The thing is, when objects are zooming through space about 2 km/s, even something as tiny as a chip of paint can smash through glass or steel. Pieces of debris become bullets. What Kessler predicted is that sooner or later, objects in low-earth orbit would start colliding, and produce chain effects, like billiard balls colliding on a crowded pool table. If a piece of debris hit a satellite, it would produce more debris, which would to increase the risk of other collisions … and so on, and so on. At some point, you could reach a tipping point. There’d be so many chunks of debris that collisions would be inevitable, leaving low-earth orbit a junkyard where no satellites could survive. Remember the scene in Wall-E where they blast off Earth, and the planet is utterly ringed with crap? That’s what Kessler worried about. Except in our situation the pieces of junk could be quite small — billions of objects the size of grains of sand, which is actually a lot harder to deal with, because you can’t see it coming. In essence, Kessler predicted we could create an artificial asteroid belt of junk: The result would be an exponential increase in the number of objects with time, creating a belt of debris around the earth. This process of mutual collisions is thought to have been responsible for creating most of the astroids from larger planetlike bodies. Space folks began calling this the “Kessler Syndrome”. It was hard to predict when this might start happening. Kessler worried that conditions could be ripe by as early as 2000. Thankfully, that estimate turned out to be premature. But wow, it looks like it might happen soon. What’s happened recently that makes the “Kessler Syndrome” more likely? A couple of things: Way more satellites are going up The pace at which satellites are going up in the sky is simply exploding. Back when Kessler wrote his paper in 1978, we humans were launching about 53 new satellites a year. Going to space was hard. But now launches are an order of magnitude more common, and they’re increasing in pace rapidly. SpaceX in particular is launching oodles of satellites as it builds its orbital Internet-access service Starlink. In the last two years, it has put 1,740 satellites in low-earth orbit, with plans to eventually shoot 30,000 up there. This is part of a larger trend, which is … The privatization of outer space The private sector is rapidly becoming the dominant actor in space. There’s a huge demand for satellite data — everyone wants better info about weather, crops, traffic patterns, tree coverage, emissions, you name it, on top of the explosive use of satellites for communication and Internet. SpaceX’s remarkable innovations in rocketry (the leading folks, though others are following in their footsteps) have made it cheaper than ever to get a satellite into orbit. It is unlocking a huge pent-up demand for near-earth-orbit tech. More launches mean not only more intentional objects in orbit but unintentional ones — bits of rocket parts and detritus from launches.

#### Privatization exponentially increases the curve but ending dangerous missions prevents it.

Bernat 20 [Pawel, 2020, Military University of Aviation, “ORBITAL SATELLITE CONSTELLATIONS AND THE GROWING THREAT OF KESSLER SYNDROME IN THE LOWER EARTH ORBIT,” SAFETY ENGINEERING OF ANTHROPOGENIC OBJECTS, Volume 4, PDF] Justin

5. Orbital satellite constellations and the growing threat of the Kessler syndrome Space 2.0 – the new era of space exploration that we witness now in the 21st century means, in words of Buzz Aldrin, “moving human enterprise into space” (Pyle, 2019, p. xiv). The process of commercialization of outer space has already begun and is not limited to private companies providing technologies and services for national or international space agencies, as it was in the past. On the contrary, private companies from the space sector have now matured to carry out their own independent projects. As for 2020, SpaceX is a company that serves as the best example – it launches satellites to the orbit, both for state and private contractors, it successfully realized two crew missions to the International Space Station, and is in the process of constructing Starlink satellite constellation that will provide high-speed internet access across the planet. Each satellite weighs around 260 kg, is equipped with an ion propulsion system, autonomous collision avoidance system, and orbits Earth at approximately 540-560 km altitude (Starlink, 2020). At the beginning of November 2020, more than 860 Starlink satellites were orbiting the Earth (Jewett, 2020). Immediate plans include launching 12,000 satellites, but they assume a potential later extension to 42,000 (Henry, 2019a). Of course, SpaceX has employed, at least declaratively, all necessary measures to keep the space clean – the satellites are equipped with the deorbiting system, and in the event of inoperability of the propulsion system (Starlink, 2020). The orbital collisions are, however, inevitable. As it was shown before, the possibility of collisions grows with the number of orbital objects. Bastida Virgili with the team compared (2016, p. 154-155) orbital debris environment development without and with a large hypothetical constellation consisting of merely 1080 satellites, distributed across 20 orbital planes at 1,100 km altitude (Fig. 5).

Chart, line chart

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It has to be noted that although SpaceX’s Starlink is the only constellation that is being built in orbit, it is not the only one planned. There are at least a few initiatives aiming at the same goal – to construct internet infrastructure at the Earth’s orbit. The planned Kuiper Systems LLC, which is a subsidiary of Amazon and intends to place 3,236 broadband satellites in the LEO, is one of Starlink’s biggest competitors (Henry, 2019b). Now, there is even a rivalry between the two companies because Kuiper’s lowest orbital shell is planned to be 590 km, with a tolerance of 9 km either above or below (Cao, 2020), which is the altitude of Starlink satellites. Moreover, the race for space in orbit is now at the beginning. The outer space is vast. It increasingly becomes more cluttered with both operational satellites and space debris. The threat of collisions increases and no institution or body has enough power to license, coordinate and regulate what is sent to the orbit. The UNOOSA has not such power. National states decide what the companies from the space industry can launch to space. In the United States, which is most advanced in the area of private constellations, it is the Federal Aviation Administration (FAA) that issues the appropriate approvals. The race to put broadband internet satellites bears similarities to the gold rush – there are no rules, at the global level, apart from first-come, first-served.

#### Debris causes nuclear war---Noko, Iran, and China.

Beauchamp 14 – Zack, 4/21/14, Zack Beauchamp is a senior correspondent at Vox, where he covers global politics and ideology, and a host of Worldly, Vox's podcast on foreign policy and international relations. His work focuses on the rise of the populist right across the West, the role of identity in American politics, and how fringe ideologies shape the mainstream. Before coming to Vox, he edited TP Ideas, a section of Think Progress devoted to the ideas shaping our political world. He has an MSc from the London School of Economics in International Relations and grew up in Washington, DC, where he currently lives with his wife, daughter, and two (rescue) dogs [“How space trash could start a nuclear war,” Vox, <https://www.vox.com/2014/4/21/5625246/space-war-china-north-korea-iran>] Justin \*Brackets added for ableist language

If debris from a Chinese test destroys a US military satellite, the US could mistake it as a preemptive strike against its space capabilities — some of which are designed to detect nuclear missile launches. If the US thinks China is trying to take out its ability to detect a nuclear launch, things could get very bad, very quickly. Accidents aren't the only concern. Zenko also worries about intentional space attacks, either during peacetime or a crisis. Here, Iran and North Korea are probably bigger threats, though their ASAT capabilities are far from proven. North Korea has a pattern of ~~crazy~~ [irrational] military moves designed to extort concessions from South Korea and the West; it could extend that behavior to space. Iran, according to Zenko, "already views space as a legitimate arena in which to contest US military power." He worries that Iran might fire missiles into space "during a major crisis, especially if it believes war is imminent — an assessment that could have self-fulfilling consequences."

#### Any nuclear war causes extinction – ice age and famine.

Steven Starr 15 [Director of the University of Missouri’s Clinical Laboratory Science Program, as well as a senior scientist at the [Physicians for Social Responsibility](http://www.psr.org/). He has worked with the Swiss, Chilean, and Swedish governments in support of their efforts at the United Nations to eliminate thousands of high-alert, launch-ready U.S. and Russian nuclear weapons. “Nuclear War: An Unrecognized Mass Extinction Event Waiting To Happen.” Ratical. March 2015. <https://ratical.org/radiation/NuclearExtinction/StevenStarr022815.html>] TG

A war fought with 21st century strategic nuclear weapons would be more than just a great catastrophe in human history. If we allow it to happen, such a war would be a mass extinction event that [ends human history](https://ratical.org/radiation/NuclearExtinction/StarrNuclearWinterOct09.pdf). There is a profound difference between extinction and “an unprecedented disaster,” or even “the end of civilization,” because even after such an immense catastrophe, human life would go on. But extinction, by definition, is an event of utter finality, and a nuclear war that could cause human extinction should really be considered as the ultimate criminal act. It certainly would be the crime to end all crimes. The world’s leading climatologists now tell us that nuclear war threatens our continued existence as a species. Their studies predict that a large nuclear war, especially one fought with strategic nuclear weapons, would create [a post-war environment in which for many years it would be too cold and dark to even grow food](http://climate.envsci.rutgers.edu/pdf/RobockToonSAD.pdf). Their findings make it clear that not only humans, but most large animals and many other forms of complex life would likely vanish forever in a nuclear darkness of our own making. The environmental consequences of nuclear war would attack the ecological support systems of life at every level. Radioactive fallout, produced not only by nuclear bombs, but also by the destruction of nuclear power plants and their spent fuel pools, would poison the biosphere. Millions of tons of smoke would act to [destroy Earth’s protective ozone layer](https://www2.ucar.edu/atmosnews/just-published/3995/nuclear-war-and-ultraviolet-radiation) and block most sunlight from reaching Earth’s surface, creating Ice Age weather conditions that would last for decades. Yet the political and military leaders who control nuclear weapons strictly avoid any direct public discussion of the consequences of nuclear war. They do so by arguing that nuclear weapons are not intended to be used, but only to deter. Remarkably, the leaders of the Nuclear Weapon States have chosen to ignore the authoritative, long-standing scientific research done by the climatologists, research that predicts virtually any nuclear war, fought with even a fraction of the operational and deployed nuclear arsenals, will leave the Earth essentially uninhabitable.