### Toplevel

Close proximity of resource sites and limited resources on the moon ensure escalation. Private mining companies clustered in specific geographical regions ensure hotspots for escalation driven by geopolitical competition.

#### Toplevel –

#### 1] Scenarios don’t start at 100% - each one of theirs is one line of speculative crackpot nonsense that’s super far off which means the likelihood of nuclear war being big and bad o/w on timeframe and probability

#### 2] Current suffering o/w – precluding future humans isn’t bad cuz you can’t deny something that wasn’t experienced, but preventing pain is good since it affects people who feel things now

#### 3] Our impact turns their scenarios – more people means more ideas and advanced research to solve their impact

#### Yes extinction – radiation blocks out sun nobody could eat

Not in context of great power war

### ---AT: No Transition/Shift

#### Nuclear use wouldn’t cause disarm movements

Karthika Sasikumar 17. Associate professor of political science at San Jose State University and an affiliate of the Center for International Security and Cooperation at Stanford University. 07/04/2017. “After Nuclear Midnight: The Impact of a Nuclear War on India and Pakistan.” Bulletin of the Atomic Scientists, vol. 73, no. 4, pp. 226–232.

It is possible that witnessing a nuclear catastrophe would impel citizens and political leaders to launch a new campaign for nuclear elimination. However, this seems unlikely for two reasons. First, in the short and medium term, leaders would be distracted by the task of managing the consequences of the nuclear exchange (for instance, finding new suppliers for essential imports). Second, the main obstacles to disarmament that exist today (reliance on deterrence among the major powers, a lack of trust in international verification mechanisms, and the entrenched power of the military–industrial–scientific complex) will persist.

Olsen 19 [Maja Olsen, UX writer at Convertelligence. Why robots will never turn on us. 1/28/19. https://medium.com/convertelligence/why-robots-will-never-turn-on-us-3b2e90f687fb]

Hector Levesque, a Canadian professor in computer science, says that “in imagining an aggressive AI, we are projecting our own psychology onto the artificial or alien intelligence”. It’s clearly difficult for us to imagine intelligent life different to ourselves. Perhaps we associate intelligence with humanness and thus assume that any intelligent creature — or object — would inhabit human goals and ambitions. But artificial intelligence is not human. As the Future of Life Institute states:

Of course, autonomous weapons can be terrifying, but they’re not likely to wake up one day and decide they’ve had enough of taking bad orders and that they deserve to live out their own dreams instead.

The concept of mirroring our own consciousness onto machines is not new. When automobiles first appeared on the market, people formed «safety parades», protesting these inherently evil killer machines that were taking the lives of so many innocent pedestrians. It soon became clear, however, that the cars never deliberately killed anyone. The humans made them do it.

Humans programming AI to do evil is another popular theme in Sci-Fi. In Stanley Kubrik’s 2001: A Space Odyssey, the intelligent supercomputer, Hal, finds that his program goal clashes with what his human co-workers want him to do. When they try to shut him off, thus making it impossible for him to complete his goal, he kills them. He’s not necessarily evil — he’s being practical.

This is, of course, a fictional scenario. However, there is one element of truth to it: any technology can be harmful if we program it to be. We want to avoid that AI adopts human biases or is programmed with an unethical or in some way problematic goal. AI is no more evil than a car is, but a car too can cause damage if its driver doesn’t follow certain traffic rules. The report, The Malicious Use of Artificial Intelligence, therefore recommends that “policymakers should collaborate closely with technical researchers to investigate, prevent, and mitigate potential malicious uses of AI.”

It’s important to lay down some traffic rules.

We’ve established that while it is important to take precautions against AI being used maliciously, AI is not evil and is unlikely to develop a personal vendetta against humans — or even to develop a sense of self at all. Does that mean the futures portrayed in Sci-Fi are all wrong? Not necessarily. While AI won’t become human, it will likely seem more and more human in the way it communicates, as the AI’s personality will play an important part in the user experience. AI will also become a lot smarter, although researchers disagree on precisely how smart they’re going to become, or exactly when they’ll reach this level of intelligence.

And then, of course, it’s not actually the case that the only artificial intelligence we see in movies comes in the shape of human-like robots, even though these seem to get the majority of the attention. Sci-Fi movies are propped with artificial intelligence: doors with speech recognition, self-driving cars, pills with nanotechnology. Whether the movies have chosen a bleaker, dystopian path (which they often tend to do) or a more utopian take on the future, most Sci-Fi seem to agree that there is a wave of new technological inventions ahead. This resonates with reality. An article by Forbes outlines some of the new possibilities AI provides:

From exploring places humans can’t go to finding meaning from sources of data too large for humans to analyze, to helping doctors make diagnoses to helping prevent accidents, the potential for artificial intelligence to benefit humans appears limitless.

Mirroring human traits onto machines might create misconceptions of what artificial intelligence actually is, but Sci-Fi writers and computer researchers seem to agree on one thing: Artificial intelligence is hugely exciting.

No, the machines will not become evil and turn on us. Yes, it’s important to still take some precautions when programming AI. Exploring potential futures creates a fascinating backdrop for a movie, but the real-life possibilities are no less than the imaginative ones — they’re just different.

### 1AR – Kant

Extinction o/w – hindering a hinderence – extinction would disproporionality affect minorities and low income people

#### 1. Schmagency objection—people can shift out of their constitutive obligations and just be a schmagent which means it can never hold anyone culpable and permits atrocities

#### 2. Tailoring objection—you can always tailor a maxim to be more and more particular to the point where every maxim is permissible

#### 3. Deduction fails—it’s grounded in the transcendent world which means it never has an implication in our factitious world and no one would be held morally obligated for anything within a factitious world

Regress flips neg - Infinite regress you need to understand reasoning to understand why reasoning is good so there’s no foundation for your ethic rendering all actions permissible

### AT Practical Reason

#### This falsely conflates reason and the sort of practical rationality their authors are talking about. Reasons are simply justifications for acting in a certain way or supporting arguments for a logical proposition whereas their authors are talking about a statement of universal validity based in pure reason. Conceding that we act for reasons, doesn’t concede anything more than there must be a “because” statement following our actions. However, this concession doesn’t entail or segue into any particular interpretation of philosophical reason.

#### Just because we give reasons for actions doesn’t mean that all moral theories must be premised on reason. Kantian Reason arbitrarily identifies reason as the moral quality of an action but lacks a reason why the other qualities of a particular action, lost when reason is universalized, fail to be equally important to the moral quality of the action.

#### Fallacy of Origin – we can say morality is deduced from practical reason without holding that reason is in itself valuable.

#### Practical reason assumes that all people who engage in “correct” reasoning will reach inescapable and objective conclusions. This is flawed. Coburn

Coburn, Robert C. [Quals] “A defense of ethical noncognitivism.” Philosophical Studies, vol. 62, no. 1, April 1991, pp. 67-80.

**“**If [multiple] criteria encapsulate the kinds of considerations that have in fact been appealed to in criticizing and supporting moral theories, then it is easy to see why it is so dubious that all rational agents will agree about the correct moral theory once they have gone through a process of [practical reasoning] type M. The central thought is just that **[J]udgments about the extent to which a given moral theory satisfies** (or fails to satisfy) **various** of these **criteria, [**and] as well as judgments about the weights the different criteria should receive, are bound to reflect facts about the inquirers that do not hold of rational agents *qua* rational. In other words, [S]uch judgments **are** bound to be **affected by idiosyncratic features** of the inquirers, **such as** their **genetic[s]** constitutions **and** thephysical and **cultur[e]** al environments in which the phenotypic expressions of these genotypes have developed**.** Think, for example, about the ways **[T**]he intuitive judgments of members of the human species differ as regards right and wrong in various actual and imaginable cases or what the ideal person is like. And must the judgments of rational agents agree about the relative weights ‘conformance utility’ and ‘acceptance utility’ should receive in assessing the extent to which a moral code satisfies the welfare criterion, or when a set of ‘priority rules’ is ‘readily surveyable,’ or whether it is easy to establish that certain principles have been applied correctly? Surely not. In any case, **[so] it is easy to conceive of rational beings who differ** from us **on these matters, and** that is all that is required to **undermine the claim that there would be agreement among** all possible **rational agents** once they had [who] undergone a process [of practical reason**]** of type M - at least if I am right about the kinds of considerations that would be considered in undergoing such a process**.”**

#### These flaws are impossible to correct. Coburn 2

Coburn, Robert C. [Quals] “A defense of ethical noncognitivism.” Philosophical Studies, vol. 62, no. 1, April 1991, pp. 67-80

“Or, finally, recall the **[P]sychological adaptation** criterion. It virtually **ensures disagreement among** inquirers who have undergone an [process of deep **reasoning]** M-process, **since it cannot fail to be true that somewhere in logical space there exist rational beings whose natures are significantly different from ours.** And this fact makes it likely that the **[S]tability, publicity, and congruence** criteria **will** also give **rise to disagreement**, too, **since how a code fares** [under] vis-a-vis these criteria **depends on the natures of the beings** whose conduct the code will govern.”

#### Practical reason isn’t normative because we can have reasons to act without reflection, and we can act without a good reason despite reflection. Silverstein

Silverstein, Matthew. Korsgaard on Normativity. Columbia/NYU Graduate Conference in Philosophy. 2004. pg. 4.]

Despite this misunderstanding, though, Parfit’s objection still stands. Even if Korsgaard’s notion of normative force is not reducible to motivating force, it remains unsatisfyingly subjective. Consider her claim that the term reason refers to a sort of “reflective success.” Reflective success may be required for us to act for a reason, but—Parfit argues—we can have a reason to act withoutsuccessfullyreflecting(or even reflecting at all**).** If my friend is in pain, then I have a reason torun to hisaid, even if his need never enters my mind. For Parfit, a good reason has normative force whether we confront [it]that forceduring deliberation or not**.** Moreover, we cansuccessfullyreflect on a set of considerations and then act accordingly without having a good reason to do so**.** Thus,reflective success [is**]** seems to be neither a necessary nor a sufficient condition for a considerationto count as a reason for action. According to Parfit, full-blooded normativity or justification involves more than justification from the agent’s own, first-person perspective; and if Korsgaard’s theory reduces the former to the latter, she has lost the normativity in her attempt to discover its source.

#### Property rights assume a government to enforce them which means original acquisition in space is unjust, and cosmopolitan rights trump acquired rights like property.

Walla 16 [(Alice Pinheiro, Department of Philosophy at Trinity College Dublin) “Common Possession of the Earth and Cosmopolitan Right” Kant-Studien Volume 107 Issue 1, 2016] TDI

Similarly to Grotius and Pufendorf, Kant tells us how external objects of choice can become the property of persons, that is, how the original suum can be extended to external objects. For Kant, this is far from being obvious. He assumes that we are born with a right to be free from unjustified interference in the exercise of our agency. This innate right also entails our physical integrity, but does not originally extend to objects outside us. The fundamental assumption which Kant shares with Grotius and Pufendorf is that rights can only be derived from something the person already has, that is, from the suum. Kant’s argument for the inclusion of external objects under the notion of right is that we must assume a legal capacity to become owners of objects, in order to avoid a contradiction. External freedom (and with it pure practical reason) would be depriving itself of the possibility of using objects of choice and thus contradicting itself (ein Widerspruch der äußeren Freiheit mit sich selbst). We must thus introduce a postulate of practical reason, assuming the possibility of becoming legal owners of objects.

Once it has been established that external objects can become the matter of rights (i.e., that the suum can be extended to external objects), the next question Kant’s theory must address is the problem of acquisition of external objects. Acquisition is the empirical deed through which an external object is incorporated into a person’s suum. First or original acquisition is when an object becomes for the first time the possession of someone. Explaining the possibility of original acquisition is extremely important since all further acts of acquisition are derived from it. Interestingly, Kant argues that acquisition of land must be conceived as prior to the acquisition of objects. Possession of anything on a territory presupposes the possession of the territory itself, since objects are regarded as mere accidents of the substance on which they “inhere”, i.e. the land on which are located. Kant’s claim relies on the ontological dependence of accidents on the substance: just as the accidents cannot exist independently of the substance, movable objects cannot be acquired without the prior acquisition of land on which they are located. However, one may wonder if this ontological dependence can be extended to the relation between land and movable objects. Is it not possible to possess movable objects without possessing the land on which they are located? Katrin Flikschuh argued that unless one has some control over the land on which one’s possessions are situated one’s right to those possessions would be easily compromised. One would be at the mercy of others while pursuing one’s ends. While possession of external objects does not require that I myself possess the land on which these objects are placed, I must at least be able to enter some form of agreement with someone who owns or has control over the land lest I be in the situation of a squatter: someone who can be permanently pushed away with one’s possessions from one place to the other. If so, some kind of ownership of land or at least a right to control the land is necessary to secure one’s right to things. Because I can in principle occupy the space on which your object is situated by displacing your object from its location, displacing your object without your consent would be in principle no infringement upon your possession. We could think of a scenario where you would have to look for your car every time you leave work because it keeps being moved around from where you parked it in the morning. The car would still be yours, but you have no control over its location. However, secure possession of objects must entail the possibility of determining the location of one’s possessions.

Although this is certainly correct, it seems to miss Kant’s fundamental point, which is not merely about the empirical conditions necessary for securing possession of objects, but about the normative priority of acquisition of land over acquisition of objects. Acquisition of land must be understood as normatively prior to acquisition of objects due to the spatial character of Kant’s theory of property and of his legal theory in general. Right has to do with external freedom, an aspect of freedom which would be irrelevant if we were not embodied rational beings, not only in space, but also confined with each other to the limited surface of the earth. The limited dimension of the planet (which also defines the limits of human expansion) renders the interaction and the possibility of impact on the mutual exercise of external freedom inevitable. Our agency can have, and will most likely have, an impact on the agency and rights of others. Nowadays we do not even need to travel to distant lands to do this: climate change proves that my external deeds can have a considerable impact on your agency and way of living wherever you are. In other words, we are globally interconnected, whether we want it or not. Therefore, there would be no problem of Right without the possibility of interaction which arises from our embodiment and the limited space to which we are confined. The problem of Right in Kant’s theory is thus essentially a spatial problem: we must bring the external exercise of freedom of a plurality of persons under a system of external freedom, that is, in accordance with universal laws which can regulate these interactions. Without universal laws, that is, a priori principles, there can be no necessity and consequently no rights and obligations that deserve the name. Therefore, although the problem of Right has an empirical component, namely the facts about the human condition mentioned above, the solution to the problem of right must nevertheless be provided by rational principles. The project of Kant’s legal philosophy in the Doctrine of Right is to provide the a priori principles capable of addressing the problem of right, taking into account the different levels of possible interaction and institutionalization of right: within individuals in a common polity (state right), between polities (international right) and as citizens of the world (cosmopolitan right).

Although we can conceive possession of objects as separate from possession of land, this independence is only normatively possible through the idea that the first proprietor of land can dispose of the objects acquired via his acquisition of land. The idea is that persons were able to enter contractual relations with whoever first possessed the land and thus acquire movable objects independently of possessing the land themselves. Kant’s point is to explain where acquired rights to movable objects come from, normatively speaking. Once acquisition of objects becomes independent from possession of land, we need contracts regulating the location of objects, that is, agreements between possessors of land or those with jurisdictional rights over land and proprietors of movable objects. I can park my car in the street, even though the street does not belong to me, provided I satisfy certain requirements (I might need to pay a parking ticket or refrain from parking at certain areas at certain times and so on).

Acquiring land for the first time must be regarded as a realization or “particularization” of innate right. But this is the beginning of another problem. First acquisition of a piece of land involves both singling out a specific part of land as my “dominion” and excluding others from access to it. However, Kant’s legal theory does not assign a right conferring function to empirical acts. If acquisition is to have a legal quality, its lawfulness cannot be grounded on an empirical act. Further, if empirical acquisition justified possession, we would have to regard possession as a legal relationship between a thing and a person. This is not an option in Kant’s theory, according to which legal relations pertain only between persons as beings capable of obligation and consequently as subjects of rights. Therefore, the legal foundation or title (Rechtsgrund, titulus possessionis) enabling the acquisition of land must be understood as follows: it must precede the empirical act of acquisition and is not created by it; is a relation between persons in regard to external objects, and finally it is able to impose an obligation on all others to respect one’s acquisition. The idea of the original community of the earth is what constitutes this Rechtsgrund:

All human beings are originally in common possession of the land of the entire earth (communio fundi originaria) and each has by nature the will to use it (lex iusti) which, because the choice of one is unavoidably opposed by nature to that of another, would do away with any use of it if this will did not also contain the principle for choice by which a particular possession for each on the common land could be determined (lex iuridica) But the law which is to determine for each what land is mine or yours will be in accordance with the axiom of outer freedom only if it proceeds from a will that is united originally and a priori (that presupposes no rightful act for its union). Hence it proceeds only from a will in the civil condition (lex iustitiae distributivae), which alone determines what is right (recht), what is rightful (rechtlich), and what is laid down as right (Rechtens). But in the former condition, that is before the establishment of the civil condition, but with a view to it, that is provisionally, it is a duty to proceed in accordance with the principle of external acquisition. Accordingly, there is also a rightful capacity of the will to bind everyone to recognize the act of taking possession and of appropriation as valid, even though it is only unilateral.

A unilateral will cannot impose an obligation on others. It is a contingent exercise of freedom and has no authority to impose an obligation. For this, we would need the consent of all others whose exercise of freedom is restricted by that unilateral act. Omnis obligatio est contracta: all obligation must be self-imposed. The idea of a united will of all therefore extends the scope of Kant’s reason based legal philosophy, introducing what seems to be a voluntaristic element in his theory. A unilateral will can only impose an obligation on others if it is the will of everyone that it be so. However, for Kant it is not enough that this be the will of all (as a contingent matter of fact), but that it is a priori the will of all. In Kant’s reason based legal theory, only reason can impart necessity. The necessity of respecting unilateral acts of acquisition is thus derived not from the unilateral acts themselves (which are empirical and therefore contingent), but from the united will of all, which is a priori and therefore necessary.

But how can he assume that we all want a priori that objects be appropriated to the exclusion of others? How could I possibly want to be excluded from using an object I might be interested in? The notion of a united will a priori follows from the fact that intelligible possession is a priori necessary and for this, acquisition of objects to the exclusion of others must be permitted from the perspective of pure practical reason. Since on pain of contradiction practical reason must allow appropriation of objects, it must be the case that it is our will to be able to use objects of choice. This is why the general will is said to be united a priori, independently of actual consent.

It is important to note that the same rational principle that allows the use of external objects as an extension of innate freedom is the one that makes it necessary to assume an a priori united will. This idea ensures the compatibility of Kant’s theory of acquisition with the principle of right. Because acquisition of objects to the exclusion of others would mean an unjustified impediment on their freedom, only the assumption of an a priori united will can make acquisition rightful. However, Kant also stresses that a united will is only realized in a condition of public justice, that is, in the civil condition. Possession of objects thus commits us to the implementation of a system of distributive justice under which the a priori united will can be realized.

The transition from common ownership of the earth to a concrete individual possession of land requires a principle of distribution, according to which the earth can be divided. Distribution in this case can only be done by an empirical act: occupation (Bemächtigung, occupatio) through a unilateral act of choice (Act der Willkür). In taking physical possession of a piece of land, an individual is particularizing her original right to be somewhere. However, the only principle available for determining who has originally acquired something is prior in time, strong in right (qui prior tempore portior iure). Unless the right is given to the person who arrived first, no person would ever be able to exercise the right to acquire land, for anyone else would have a claim to the land that person acquired. Being the first to take control over a piece of land must entitle the agent to keep it despite the possible interest of others, as a condition for the possibility of making use of land at all. It therefore follows from prima occupatio that native peoples must be seen as the rightful possessors of their land. All later acquisition of land can only be derived from first possession, that is, it must be transferred to another by means of a contract with the native peoples, which presupposes their free and true consent in order to be valid. Further, this principle of distribution must be understood as contained in the united will of all (who have the will, individually, to use the land).

III. Community of the Earth as the basis of Cosmopolitan Right

The idea of communio fundi originaria has implications that extend beyond what is required for the justification of a right to external things. This is because the realization of one’s right to occupy space does not start with the occupation of land for the first time, but already with birth. When we are born, our mere “entrance in the world” is already a legally relevant fact. Not only have we come to occupy space in the world, we also have an original right to do so: this is “the right to be wherever nature or chance (apart from their will) has placed them”. The existence of a person in the world entails both her equal legal status among a plurality of subjects of right and her original right to occupy space. Persons are also automatically members of the global community of the earth, which is constituted by the unity of all possible places individuals can occupy within the limited surface of the earth.

Common possession of the earth plays a central role in Kant’s argument for cosmopolitan right. Although the role of cosmopolitan right, I will argue, has an analogous function to Grotius’ right of necessity and Pufendorf’s imperfect rights and duties, Kant’s “revival”of the original community in cosmopolitan right is nevertheless a radical redefinition of the Grotius- Pufendorf tradition.

[It] is not the right to be a guest (Gastrecht) (…) but the right to visit (Besuchsrecht); this right to present oneself for society, belongs to all human beings by virtue of the right to possession in common of the earth’s surface on which, as a sphere, they cannot disperse infinitely but must finally put up with being near one another; but originally no one had more right than another to be on a place on the earth.

This rational idea of a peaceful, even if not friendly, thoroughgoing community of all nations on the earth that can come into relations affecting one another is not a philanthropic (ethical) principle but a principle having to do with rights. (…) And since possession of the land, on which an inhabitant of the earth can live, can be thought only as possession of a part of a determinate whole, and so as possession of that to which each of them originally has a right, it follows that all nations (Völker)stand originally in a community of land, though not of rightful community of possession (communio) and so of use of it (…).

In the Doctrine of Right, Kant derives nations’ original community of the land from the fact that the possession of individuals (to which they have an original right), can be thought as a part of a determinate whole. National borders in connection with an internal civil condition make the extent of individual possessions relatively determinate. Borders delineate the scope of individual acquisition in a way which, although not peremptory until the institution of a cosmopolitan condition of distributive justice, is closer to the idea of right than leaving individuals to determine the limits of their acquisition in a wholly unilateral way (as in the state of nature). Unlike Locke, Kant has no theoretical resources for establishing the content (Inhalt) of occupation; the prior occupans must decide according to her own judgment if her possession is being infringed upon and consequently have a conception of the extent of her possession. Only the civil condition is able to provide relatively legitimate conditions for determining the scope of acquisition. This necessity makes Kant’s theory far more dependent on the institutionalization of right than Locke’s theory. The territorial rights of states can thus be understood as a necessary step towards a cosmopolitan condition of distributive justice.

As Kant formulates in Perpetual Peace, “cosmopolitan rights shall be limited to the conditions of universal hospitality”. This is a right to offer oneself for commerce (Verkehr) with one another, be the subjects of these rights individuals or nations. As cosmopolitan right makes clear, the idea of common ownership of the earth presents itself under two different modes:(1) as basis of the acquired right of host peoples to their territory, enabling them to decline voluntary interaction, and (2) as the basis for the original right of individual citizens of the world or nations to offer themselves for interaction with foreign nations. In Perpetual Peace Kant called this right “right to visit”, which is neither a right to settle (ius incolatus ) nor to be a guest in the foreign land (kein Gastrecht ). As Kant stresses, host nations retain a right to reject the visitor on the condition that this can be done “without causing his destruction”. Although visitors have no claim to enter the foreign territory, they should not be treated with hostility by the inhabitants, if they behave peacefully.

However, the original community of the earth also imposes constraints on the acquired right of host nations to control their borders. Kant makes clear that host nations have the right to reject visitors whenever their reason for interaction is voluntary. Similarly to the original right to a place on the surface of the earth, the right to admission in a foreign territory obtains only under the condition of involuntary occupation of space. Just as the occupation of space by virtue of one’s entry in the world is independent of one’s will, rejecting an involuntary visitor when this would harm or destroy her is incompatible with the original community of the earth. As Kant stresses, in principle no one has more claim to a specific area of the earth than another person. The global distribution of land is thus wholly contingent. Today’s nations can be seen as “permitted” to control a certain territory to the exclusion of others because borders are helpful for determining the extent of individual acquisition, at least within that territory. However, to deny life-saving occupation of space to another being, who is in principle just as entitled as anyone else to any place of the earth would be to contradict the very justification for the territorial rights of states. This is because the permission to control territory and the right of the involuntary visitor to be admitted are based on the same legal foundation or Rechtsgrund, namely, the original community of the earth. Kant could easily have insisted that the acquired right of nations to their territory not only has priority but trumps the original right of persons to occupy space. It is worthy of attention that he did not accept this in the case of involuntary occupation of space.

My view is that cosmopolitan right signalizes a contradiction of the right to occupy space with itself under different modalities: on the one hand as the original right of individuals or nations to “be somewhere” (as belonging to the lex iusti) and on the other, the acquired right of peoples to their land (belonging to the lex iuridica). Kant distinguishes between three leges or conditions of justice: lex iusti, lex iuridica and lex iustitiae . The distinction is essential for understanding the relationship between Right as a system of external laws a priori and the subsequent developments of right. As Byrd and Hruschka stressed, the three leges correspond to three categories of modality in the Critique of Pure Reason: possibility (Möglichkeit), reality (Dasein) and necessity (Notwendigkeit ). They can be seen as different “modes” of the same idea of right: original right as the pure rational concept of right (possibility), acquired right as arising from concrete deeds or relations between agents (reality) and peremptory right as legitimized and enforced by a public court of justice (necessity). Although there is a positive development in the transition from the lex iusti, through the lex iuridica, to thelex iustitaedistributivae in the civil condition, the lex iusti is not made superfluous in the civil condition, but is still the source of the normativity, and consequently, of the legitimacy, of all further developments of right. The need for maintaining the compatibility of the development of right with its a priori normative source is what gives rise to cosmopolitan right. In this sense, cosmopolitan right in Kant’s theory has a similar function to the right of necessity in Grotius and imperfect rights and duties in Pufendorf’s theory. They are needed to avoid scenarios which would contradict the rationale for introducing certain rights.

## 1AC—Plan

#### Plan: The appropriation of outer space through lunar mining by private entities should be banned.

#### We’ll defend normal means as the signatories of the OST adding an optional protocol under Article II.

Tronchetti 7[Fabio Tronchetti is a professor at the International Institute of Air and Space Law, Leiden University, The Netherlands, 2007, <https://iislweb.org/docs/Diederiks2007.pdf>, 12-15-2021 amrita]

ARTICLE II OF THE OUTER SPACE TREATY: A MATTER OF DEBATE The legal content of Article II of the Outer Space Treaty is one of the most debated and analysed topic in the field of space law. Indeed, several interpretations have been put forward to explain the meaning of its provisions. Article II states that: “Outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means”. **The text of Article II represents** the final point of a process, formally initiated with Resolution 1721, aimed at conferring to outer space the status of res communis omnium, namely a thing open for the **free exploration** and use by all States **without the possibility of being appropriated**. By prohibiting the possibility of making territorial claims over outer space or any part thereof based on use or occupation, Article II **makes clear that** the customary procedures of **i**nternational **law allowing** subjects to obtain **sovereignty rights over un-owed lands**, namely discovery, occupatio and effective possession, **do not apply to** outer **space.** This prohibition was considered by the drafters of the Outer Space Treaty the best guarantee for preserving outer space for peaceful activities only and for stimulating the exploration and use of the space environment in the name of all mankind. What has been the object of controversy among legal scholars is the question of whether both States and private individuals are subjected to the provisions of Article II. Indeed, **while Article II forbids** expressis verbis the national **appropriation by** claims of **sovereignty**, by means of use and occupation or other means of outer space, **it does not** make **a**ny explicit **mention** **to** its **private** appropriation. Relying on this consideration, some authors have argued that the private appropriation of outer space and celestial bodies is allowed. For instance, in 1968 Gorove wrote: “Thus, at present an individual acting on his own behalf or on behalf of another individual or private association or an international organisation could lawfully appropriate any parts of outer space…”6 . The same argument is used today by the enterprises selling extraterrestrial acres. They base their claim to the Moon and other celestial bodies on the consideration that Article II does not explicitly forbid private individuals and enterprises to claim, exploit or appropriate the celestial bodies for profit7 . However, it must be said, that nowadays there is a general consensus on the fact that **both national appropriation and private** property rights **are denied** under the Outer Space Treaty. Several way of reasoning have been advanced to support this view. Sters and Tennen affirm that the argument that Article II does not apply to private entities since they are not expressly mentioned fails for the reason that they do not need to be explicitly listed in Article II to be fully subject to the non-appropriation principle8 . **Private entities are allowed to carry out** space **activities but**, according to Article VI of the Outer Space Treaty, they **must be authorized** to conduct such activities **by the** appropriate **State** of nationality. But if the State is prohibited from engaging in certain conduct, then it lacks the authority to license its nationals or other entities subject to its jurisdiction to engage in that prohibited activity. Jenks argues that “States bear international responsibility for national activities in space; it follows that what is forbidden to a State is not permitted to a chartered company created by a State or to one of its nationals acting as a private adventurer”9 . It has been also suggested that **the prohibition of national** appropriation **implies prohibition of private** appropriation because the latter cannot exist independently from the former10. In order to exist, indeed, private property requires a superior authority to enforce it, be in the form of a State or some other recognised entity. In outer space, however, this practice of State endorsement is forbidden. Should a State recognise or protect the territorial acquisitions of any of its subjects, this would constitute a form of national appropriation in violation of Article II. Moreover, it is possible to use some historical elements to support the argument that both the acquisition of State sovereignty and the creation of private property rights are forbidden by the words of Article II. During the negotiations of the Outer Space Treaty, the Delegate of Belgium affirmed that his delegation “had taken note of the interpretation of the non-appropriation advanced by several delegations-apparently without contradiction-as covering both the establishment of sovereignty and the creation of titles to property in private law”11. The French Delegate stated that: “…there was reason to be satisfied that three basic principles were affirmed, namely: the prohibition of any claim of sovereignty or property rights in space…”12. The fact that the accessions to the Outer Space Treaty were not accompanied by reservations or interpretations of the meaning of Article II, it is an evidence of the fact that this issue was considered to be settled during the negotiation phase. Thus, summing up, we may say that **prohibition of appropriation of outer space** and its parts is a rule which **is valid for both private and public entity**. The theory that private operators are not subject to this rule represents a myth that is not supported by any valid legal argument. Moreover, it can be also added that if any subject was allowed to appropriate parts of outer space, the basic aim of the drafters of the Treaty, namely to prevent a colonial competition in outer space and to create the conditions and premises for an exploration and use of outer space carried out for the benefit of all States, would be betrayed. Therefore, **the need to protect the non-appropriative nature o**f outer **space emerges** in all its relevance.

#### Countries and their companies are making their own rules through patchwork which creates conflict—an international body is key.

**Whittington 21** [Mark Whittington, 3-28-2021, "The new race to the moon: the Artemis Alliance vs. the Sino-Russian Axis," TheHill, <https://thehill.com/opinion/technology/545280-the-new-race-to-the-moon-the-artemis-alliance-vs-the-sino-russian-axis>] [pT]

Space News recently [reported](https://spacenews.com/china-russia-enter-mou-on-international-lunar-research-station/) that China and Russia have signed a memorandum of understanding to build what the two countries call an “International Lunar Research Station” (ILRS). The facility would conduct a number of activities either on the lunar surface or lunar orbit and would be “open to all interested countries and international partners.” Whether deliberate or not, the two countries have formed an axis against what has come to be known as the Artemis Alliance being formed by NASA with a number of countries and commercial partners. In effect, China and Russia have challenged the United States and the rest of the world to a new race to the moon. With the Biden administration having [endorsed](https://thehill.com/opinion/technology/537663-the-biden-administration-endorses-nasas-artemis-the-space-force) the Trump-era Artemis program, it looks like two credible, rival return-to-the-moon programs are now ongoing. Since one of those programs is run by two authoritarian nations and the other is led by NASA and consists of what many would consider the civilized world, the very definition of a race to the moon has developed, without fanfare, without brave speeches throwing down gauntlets. Is this a good thing or a bad thing? On the positive side, nothing like competition with a hostile power or two focuses the mind and ensures that the Artemis program remains on track and on a sensible schedule. The Apollo program succeeded because the winner of the race to the moon would have bragging rights for being the more technologically adept superpower. On the negative side, what happens to determine which side “wins” the modern space race? During the Apollo-era, the answer was easy. President John F. Kennedy [declared](https://history.nasa.gov/moondec.html) the goal of sending a man to the moon and returning him safely to the Earth before the end of the 1960s. In July 1969, the mission was accomplished. Indeed, the Apollo program had enough momentum for six more manned lunar missions before the United States stopped going to the moon and turned to other priorities. What must happen for the winner to be declared in the new moon race? Who is first to return to the moon is not as important as what happens next. The south pole of the moon is replete with water ice in shadowed craters, Water can be used to help sustain a lunar base. Water can be refined into [rocket propellent](https://thehill.com/opinion/technology/439692-returning-to-the-moon-for-rocket-fuel-and-clean-energy), making the moon a refueling stop for spacecraft headed to other destinations in the solar system, such as Mars. The moon also has a number of other resources ranging from rare earths, to platinum-group metals, to industrial metals such as titanium, iron and aluminum. [Helium-3](https://thehill.com/opinion/technology/540856-solving-the-climate-and-energy-crises-mine-the-moons-helium-3), an isotope embedded in lunar soil, could serve as fuel for future fusion power plants. In short, the side that first exploits lunar resources effectively will be the side that creates a space-based industrial revolution enabled by lunar resources. Either the Sino-Russian Axis or the Artemis Alliance will own the future. A few years ago, [according to Space.com](https://www.space.com/28189-moon-mining-economic-feasibility.html), Ian Crawford, a professor of planetary science and astrobiology at Birkbeck College in the UK, suggested that an economic case could be made for prospecting and mining lunar resources as a way to enable a near-Earth industrial infrastructure. He was skeptical about helium-3, which he regarded as a kind of “fossil fuel.” However, he concluded that in aggregate, the variety of resources on the moon could be exploited in an economical manner. The other question is, who can own space resources? The [Outer Space Treaty](https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspacetreaty.html) prohibits any assertion of sovereignty on the moon or any other celestial body. However, Congress passed a law a few years ago called the [U.S. Space Launch Competitiveness Act](https://www.govtrack.us/congress/bills/114/hr2262/summary) that asserts that American citizens who mine space resources, including on the moon, own those resources. The fact that the United States owns the moon rocks that the Apollo astronauts gathered is seen as a precedent. On the other hand, some suggest that since the act can be seen as an assertion of sovereignty, it violates the spirit of the Outer Space Treaty. The governments of China and Russia might be expected to support the latter view. In order to avoid conflict over resources on the moon or anywhere else in space, some kind of agreement, perhaps based on the [Artemis Accords,](https://www.nasa.gov/specials/artemis-accords/index.html) needs to be struck between the Artemis Alliance and the Sino-Russian Axis. The first side to exploit a deposit of minerals should own it. Otherwise, we might expect the possibility that the Third World War might start on the moon with catastrophic consequences.

### Advantage – Lunar Competition

#### Private companies are set to mine on the moon – financial incentives and state funding set a legal precedent for private activity on the moon.

**Helmore 20** [Edward Helmore, 9-11-2020, "Nasa is looking for private companies to help mine the moon," <https://www.theguardian.com/science/2020/sep/11/nasa-moon-mining-private-companies>] [pT]

Nasa has announced it is looking for private companies to go to the moon and collect dust and rocks from the surface and bring them back to Earth. The American space agency would then buy the moon samples in amounts between 50 to 500 grams for between $15,000 to $25,000. The Nasa administrator, Jim Bridenstine, announced on Thursday that the moon material collection would become part of a technology development program that would help astronauts “live off the land” for crewed missions in the future to the moon or elsewhere. Bridenstine [wrote that the agency](https://twitter.com/JimBridenstine/status/1304049845309669376?s=20) “is buying lunar soil from a commercial provider. It’s time to establish the regulatory certainty to extract and trade space resources.” The collection is part of Nasa’s [Artemis](https://www.nasa.gov/artemis) lunar exploration program established last year to land US astronauts, including the first woman and the next man, on the moon by 2024. The agency has indicated that missions further afield, to Mars for instance, will require the use of locally mined resources. “We will use what we learn on and around the moon to take [the next giant leap](http://www.nasa.gov/specials/moon2mars/) – sending astronauts to Mars,” Bridenstine wrote. [In a blogpost,](https://blogs.nasa.gov/bridenstine/2020/09/10/space-resources-are-the-key-to-safe-and-sustainable-lunar-exploration/) Bridenstine said the effort would comply with the [Outer Space Treaty of 1967](https://history.nasa.gov/1967treaty.html), which says that no country may lay sovereign claim to the moon or other celestial bodies in much the same way that the Antarctic continent is off-limits for territorial conquest. In May, Nasa [unveiled a legal framework](https://www.washingtonpost.com/technology/2020/05/15/moon-rules-nasa-artemis/) that would govern the behavior of countries and companies in space and on the moon. The legal framework, known as the Artemis Accords, include the creation of “safety zones” around sites where mining and exploration would take place on the lunar surface. Nasa’s top administrator also told a [forum](https://swfound.org/events/2020/planetary-protection-and-lunar-activities) held by the Secure World Foundation that the policies that will govern mining from celestial bodies would be much the same as those that currently exist for the world’s oceans. “We do believe we can extract and utilize the resources of the moon, just as we can extract and utilize tuna from the ocean,” he said, without referring to overfishing and pollution that is rapidly destroying fish stocks in many regions. Unlike fisheries, however, participating celestial mining companies would be required to provide imagery of the material and the location from which it was recovered. Nasa already has a separate program to contract companies to fly science experiments and cargo to the moon ahead of a human landing. Those include Astrobotic, SpaceX, Blue Origin, Sierra Nevada Corp and Lockheed Martin. Bridenstine said he anticipated some of those might also be interested in lunar mining. Casey Dreier, chief advocate & senior space policy adviser at the Planetary Society, [wrote on Twitter](https://twitter.com/CaseyDreier/status/1304080050262736896) that the importance of Nasa’s announcement is “not so much the financial incentive (which is tiny) but in establishing the legal precedent that private companies can collect and sell celestial materials (with the explicit blessing of NASA/U.S. gov)”.

#### That’s set to drive conflict- current treaties have zero authority and lack clarity—creates ineffective regulations.

**Jasmamie 21** [Cecilia Jasmamie, 2-2-2021, "Experts warn of brewing space mining war among US, China and Russia," MINING, <https://www.mining.com/experts-warn-of-brewing-space-mining-war-among-us-china-and-russia/>] [pT]

A brewing war to set a mining base in space is likely to see China and Russia joining forces to keep the US increasing attempts to dominate extra-terrestrial commerce at bay, experts warn.  The Trump Administration took an active interest in space, announcing that America would [return astronauts to the moon](https://www.nytimes.com/2019/03/26/science/nasa-moon-pence.html) by 2024 and creating the [Space Force](https://www.npr.org/2019/12/21/790492010/trump-created-the-space-force-heres-what-it-will-do) as the newest branch of the US military. It also proposed global legal framework for mining on the moon, called the Artemis Accords, encouraging citizens to mine the Earth’s natural satellite and other celestial bodies with commercial purposes. The directive classified outer space as a “legally and physically unique domain of human activity” instead of a “global commons,” paving the way for mining the moon without [any sort of international treaty.](https://www.mining.com/how-earth-bound-mining-lawyers-think-about-space-mining/) Spearheaded by the US National Aeronautics and Space Administration (NASA), the Artemis Accords [were signed in October](https://www.businessinsider.com/nasa-artemis-accords-deep-space-exploration-moon-mars-asteroids-comets-2020-10) by Australia, Canada, England, Japan, Luxembourg, Italy and the United Emirates. “Unfortunately, the Trump Administration exacerbated a national security threat and risked the economic opportunity it hoped to secure in outer space by failing to engage Russia or China as potential partners,” says Elya Taichman, former legislative director for then-Republican Michelle Lujan Grisham. “Instead, the Artemis Accords have driven China and Russia toward increased cooperation in space out of fear and necessity,” [he writes](https://www.politico.com/news/2021/01/29/biden-space-diplomacy-russia-china-455963). Russia’s space agency Roscosmos was the first to speak up, [likening the policy to colonialism](https://www.mining.com/russia-slams-trumps-order-to-spur-mining-the-moon-asteroids/). “There have already been examples in history when one country decided to start seizing territories in its interest — everyone remembers what came of it,” Roscosmos’ deputy general director for international cooperation, Sergey Saveliev, said at the time. China, which made history in 2019 by becoming the [first country](https://www.washingtonpost.com/science/2019/01/03/china-lands-spacecraft-far-side-moon-historic-first/) to land a probe on the far side of the Moon, chose a different approach. Since the Artemis Accords [were first announced](https://www.mining.com/russia-slams-trumps-order-to-spur-mining-the-moon-asteroids/), Beijing has approached Russia to [jointly build a lunar research base](https://tass.com/science/1181861). President Xi Jinping has also he made sure [China planted its flag on the Moon](https://www.bbc.com/news/world-asia-china-55192692), which happened in December 2020, more than 50 years after the US reached the lunar surface. The next Wild West? China has historically been excluded from the US-led international order in space. It is not a partner in the International Space Station (ISS) program, and a US legislative provision has limited NASA’s ability to cooperate with it in space since 2011.

#### The race to the lunar reservoir ensures escalation – only a prohibition on private entities checks.

#### **1 -- Proximity – sites are too close to each other and resources are limited.**

**Smith 20** [Adam Smith, 11-24-2020, "Scientists fear conflicts over the Moon’s resources between governments and companies," Independent, <https://www.independent.co.uk/life-style/gadgets-and-tech/moon-government-companies-resources-conflicts-b1761170.html>] [pT]

Scientists fear that the Moon might be plundered too quickly by private companies hoping to extract its valuable resources, new research has hypothesized. A lack of international policies and agreements could result in tensions, overcrowding, and a rapid expansion of moon mining projects, the Center for Astrophysics | Harvard & Smithsonian says in a new paper. Water and iron are particularly valuable resources that could be collected from the Moon, which would help companies construct infrastructure and develop agriculture as well as letting them avoid the vast expense of transporting such materials from the Earth. "A lot of people think of space as a place of peace and harmony between nations. The problem is there's no law to regulate who gets to use the resources, and there are a significant number of space agencies and others in the private sector that aim to land on the moon within the next five years," said Martin Elvis, astronomer at the Center for Astrophysics | Harvard & Smithsonian and the lead author on the paper, which has been published in [Philosophical Transactions of the Royal Society A.](http://dx.doi.org/10.1098/rsta.2019.0563) "We looked at all the maps of the Moon we could find and found that not very many places had resources of interest, and those that did were very small. That creates a lot of room for conflict over certain resources." The treaties that do exist, such as the 1967 Outer Space Treaty, do not offer staunch protection of celestial bodies from companies. The Outer Space Treaty declares that “the moon and other celestial bodies shall be used by all states parties to the treaty exclusively for peaceful purposes”, but is not exclusive to governments. The United States insisted on a clause that [allowed commercial companies to explore space](https://www.independent.co.uk/news/long_reads/if-no-one-owns-moon-can-anyone-make-money-there-space-astronomy-a8087126.html) as long as they “require authorisation and continuing supervision” of the government, as opposed to the Russian view that space exploration should be limited to governments. A following treaty, the 1979 Moon Treaty, has not been ratified by any state that engages in self-launched spaceflight such as the US, Russia, China, Japan, or members of the European Space Agency. "It tries to address the ownership of resources obtained from outer space, and really it was pretty much rejected by the international community”, Dr Jill Stuart, head of space policy at the London School of Economics, [previously told The Independent.](https://www.independent.co.uk/news/world/who-owns-outer-space-and-what-happens-when-corporations-want-extract-resources-asteroids-or-planets-10492126.html) In 2020 the [Artemis Accords were announced](https://www.independent.co.uk/life-style/gadgets-and-tech/news/nasa-moon-mission-artemis-accords-us-china-a9517091.html), which are a set of agreements that requires countries working with the US to return to the moon to commit to transparency about their work, to only explore space for “peaceful purposes”, and to guarantee they would work together to save any astronauts that came into danger during a mission. However, this still does not protect celestial bodies from being overly exploited for resources. "The biggest problem is that everyone is targeting the same sites and resources: states, private companies, everyone. But they are limited sites and resources. We don't have a second moon to move on to. This is all we have to work with." Alanna Krolikowski, assistant professor of science and technology policy at Missouri University of Science and Technology, and a co-author on the paper, said in a statement. "While a comprehensive international legal regime to manage space resources remains a distant prospect, important conceptual foundations already exist and we can start implementing, or at least deliberating, concrete, local measures to address anticipated problems at specific sites today."

#### 2 -- International Dominance – great powers want to appear hegemonically superior.

Cunningham 22 [Philip J. Cunningham has been a regular visitor to China since 1983, working variously as a tour guide, TV producer, freelance writer, independent scholar and teacher. He has conducted media research in China as a Knight Fellow and Fulbright Scholar and was the recipient of a Nieman Fellowship at Harvard. He is the author of Tiananmen Moon, a first-hand account of the 1989 protests in Beijing.] “US extends rivalry with China to the moon as it resists cooperation and seeks control over mining,” January 23rd, 2022, South China Morning Post, <https://www.scmp.com/comment/opinion/article/3164195/us-extends-rivalry-china-moon-it-resists-cooperation-and-seeks>, VM

US extends rivalry with China to the moon as it resists cooperation and seeks control over mining; Nasa claims its Artemis lunar programme will promote diversity and cooperation, but fellow space powers China and Russia have been left out in the cold. With the US attempting to lay down rules for mineral extraction, the new space race looks set to divide the world – and the moon – along Cold War fault lines There’s enough strife on land, sea and in the air to keep US Cold Warriors and their Wolf Warrior counterparts in China sparring for a long time to come, but the race to create zones of influence and secure resources doesn’t begin and end with planet Earth. With the roll-out of Nasa’s Space Launch System rocket and Orion spacecraft last March in support of the US Artemis Programme, the moon has been added to the mix. “Through Artemis, Nasa aims to land the first woman and first person of colour on the moon,” the mission statement reads. The US will “collaborate with commercial and international partners and establish the first long-term presence on the moon”. At first glance, both China and Russia would be logical international partners, but the statement has a distinctly American accent. It’s not the first time the US has tried to set the terms by which other nations can explore Earth’s only natural satellite. A US-scripted “Moon Treaty” was drawn up in 1979 but eventually withered away because the tiny handful of nations capable of competing with the US in space were not interested in signing away their rights. Even the flag-waving president Donald Trump came to disdain the treaty because it suggested that the moon should be treated as part of a “global commons” rather than as a private resource base that individual nations and corporations could exploit. Eager to approve American mining on the moon, Trump issued an executive order on April 6, 2020, “Encouraging International Support for the Recovery and Use of Space Resources”. The moribund 1979 Moon Treaty was thus scrapped. In Trumpian terms, it was “a failed attempt at constraining free enterprise”. The executive order issued by Trump is still in effect and the language has been altered only slightly. The goal of sending the “first woman and next man” to the moon was amended by the Biden administration to read “first woman and first person of colour”. There are several ironies inherent in the way US leaders talk about the space programme. One is the partisan political flavour; the Democrats emphasise its links with identity politics, while Republicans emphasise the capitalist free market element. But neither party wants to be stuck with the budget shortfalls and delays that have dogged the programme from day one. And no one is talking about including China. Given the way Nasa promotes astronaut identity, there’s a further irony in the fact that China happens to have a woman in space at this very moment, and has been sending, by the arcane terms of the US mission statement, “persons of colour” into space since the inception of their programme. If human diversity was really a serious goal of the Artemis programme, there would be scant reason not to cooperate with China. Or Russia for that matter. But why should China and Russia sign on to a day-late, dollar-short programme jump-started by Trump that defines the rules of exploitation on US terms? The US has solicited a number of allies to sign on the Artemis Accords, including members of the Five Eyes intelligence sharing bloc, as well as Japan and South Korea. But it is the recent inclusion of Ukraine that speaks volumes about the political cast of the programme. What the mission statement is really saying is that the US reserves the right to exploit the mineral resources of the moon, and will do so with allies of its choosing and within guidelines of its own creation. As for China and Russia, the only two serious rivals to the US in space, they have been left out in the cold. The Artemis Accords add another brick to the regulatory firewall the US has built regarding cooperation with China in space. The 2011 Wolf Amendment prohibited such cooperation, with the unsurprising result that China has taken a go-it-alone approach ever since. Furthermore, the inclusion in the US space bloc of Ukraine, a bitter adversary of Russia, only serves to increase the likelihood that China and Russia will look to one another as partners in space. Already, plans for a Sino-Russian moon base are being touted. The implicit anti-China gist of the Artemis programme is symptomatic of US party-driven politics in general. On the one hand, there’s a seemingly unbridgeable political divide at home; on the other, one administration looks the same as the other when viewed from afar. The ostensible aim of the Artemis programme is to promote cooperation, diversity and set down rules for lunar exploration. In reality, it is dividing the world into two camps, following the familiar East-West fault lines established in the last Cold War.

#### **3** --Rapid militarization in fear of losing resources on the Moon

David 21 [Leonard David is an award-winning space journalist who has been reporting on space activities for more than 50 years. Currently writing as Space.com's Space Insider Columnist among his other projects, Leonard has authored numerous books on space exploration, Mars missions and more, with his latest being "Moon Rush: The New Space Race" published in 2019 by National Geographic. He also wrote "Mars: Our Future on the Red Planet" released in 2016 by National Geographic. Leonard has served as a correspondent for SpaceNews, Scientific American and Aerospace America for the AIAA.] December 06, 2021, “Military interest in the moon is ramping up,” <https://www.space.com/military-interest-moon-cislunar-space>, VM

“There is growing interest in protecting strategic assets in cislunar space, the realm between Earth and the moon. The U.S. Space Force is not the only entity engaged in reflecting on the topic of how best to extend military presence far from Earth. **Other nations such as China are doing so as well.** Parallel to air, land and sea skirmishes between nations here on Earth, is cislunar space, and perhaps the moon itself, an emerging military "high ground" and new territory for conflict? There’s a variance of views, according to experts Space.com talked to. Cislunar primer Earlier this year, the Air Force Research Laboratory distributed "A Primer on Cislunar Space," a document targeted at military space professionals who will answer the call to develop plans, capabilities, expertise and operational concepts for the region. "Cislunar space has recently become prominent in the space community and warrants attention," the document explains. As the U.S. Space Force "organizes, trains, and equips to provide the resources necessary to protect and defend vital U.S. interests in and beyond Earth orbit," the primer also underscores that new collaborations will be key to "operating safely and securely on these distant frontiers." Visionary wish list In the interim, the Defense Sciences Office at the U.S. Defense Advanced Research Projects Agency (DARPA) has blueprinted a wish list of new research to enable the fabrication of future space structures — including the use of lunar resources to enable those structures. Some of that research will be performed by the Novel Orbital and Moon Manufacturing, Materials and Mass-efficient Design program, or NOM4D. NOM4D aims to develop new materials, manufacturing, and design technologies to enable future structures to be built in Earth orbit or on the moon's surface. For instance, large solar arrays, large radio frequency reflector antennas and segmented infrared reflective optics are visualized. Building a precision structure while minimizing the required mass fraction brought from Earth will enable a spectrum of Department of Defense systems to be built using lunar-derived materials, DARPA officials say. "For the purposes of understanding the hypothetical use case, proposers may consider fabrication of structures on orbit or on the lunar surface for relaunch back into orbit as long as the proposed system is consistent with the Outer Space Treaty," NOM4D documentation explains. Contract negotiations are currently underway, with the selection of NOM4D winners soon to be announced, DARPA has advised Space.com. Military moon The U.S. military has eyed the moon before. As far back as 1959, when NASA was still picking its first astronauts, the U.S. Army was concocting **plans for a moon base**, under the title of Project Horizon, explained Robert Godwin, a space historian and owner of Apogee Books, a Canadian publishing house that examines a variety of space history topics. Some details of the U.S. military's past interest in the moon remain classified to this day, Godwin said. In particular, there were looks at a nuclear bomb detonation in orbit around the moon that would empower "the weapon" — an X-ray laser that would take out enemy satellites and spacecraft, he told Space.com. That was then. But valuable U.S. assets on the moon, such as planned commercial ventures there, will make "the **military presence** to ensure their safety," Godwin said, "almost inevitable."

#### **4** -- **Miscalculation compounded by harsh space conditions and Sino-US competition**

LSE 21 [LSE IDEAS is LSE’s foreign policy think tank [London School of Economics and Political Science]. They connect academic knowledge of diplomacy and strategy with the people who use it.] April 29th, 2021, “Coordination Failure: Risks of US-China competition in space,” <https://lseideas.medium.com/coordination-failure-risks-of-us-china-competition-in-space-7112ca4f4da1>, VM Geographically Concentrated Sites of Interest Given the vast expanse of space beyond Earth orbit, it may seem odd to raise the US and China “stepping on each other’s toes” as a potential concern. However, should sites of scientific, commercial and exploration interest be geographically concentrated, the risks of a national incident **stemming from miscalculation** or obstinacy by either the US, China, or both, are **not to be dismissed**. This will likely be less due to direct competition over resources or scientific data, but because of the fact that **harsh space environments** increase the risk of harmful interference from other parties. At present, no comprehensive, agreed framework of norms exists to coordinate the activities of state and commercial actors beyond Earth orbit. Whilst international treaties exist that provide general provisions, most infamously the preclusion of the appropriation of celestial bodies by the Outer Space Treaty, a need exists for more detailed mechanisms of coordination of various interests seeking to expand their operations beyond the Earth’s well-populated orbital spheres. The US has initiated the Artemis Accords, which have been signed by 9 nations to date, and establish provisions such as the creation of safety zones to de-risk simultaneous operations. However, being bilateral and US led, these have been met by **effective silence** from China (and **outright condemnation** by Russia). This fact elevates the risk of harmful miscalculations by respective actors. Both nations’ lunar exploration programmes are exemplary of these issues and present the most urgent imminent risks. Both Artemis Basecamp and the ILRS will be situated on the Lunar South Pole. Most likely, any crewed CNSA mission hoping to establish a sustainable presence on the moon will also situate itself at the South Pole. Reflecting this, the majority of the US and China’s robotic surface missions, under the Commercial Lunar Payload Services (CLPS) and Chang’e programme respectively, are bound for the region. This trend is primarily driven by the fact that the South Pole presents an optimal environment for the establishment of semi-permanent and permanent crewed bases on the moon, and, in the longer term, for the enablement of future missions beyond the Earth-Moon system. Reasons for this include the high-duration exposure to sunlight of certain terrain within the region, alongside an apparently elevated concentration of useful and accessible resources, most immediately water.[13] A lack of coordination in such a concentrated geography could pose considerable risk, primarily because of the harsh and unforgiving environment of space.

#### 5 -- Flashpoints – water, eternal light peaks, iron, and cold traps.

**Dorminey 20** [Bruce Dorminey, 11-26-2020, "Moon Rush Could Spark Conflict, Claims Study," Forbes, <https://www.forbes.com/sites/brucedorminey/2020/11/26/moon-rush-could-spark-conflict-claims-study/>] [pT]

The coming near-term Moon rush may end up creating new political and economic tensions, or even conflicts, as both commercial and national space agency players compete for a limited number of easily accessible lunar resources. Or so says a new study by an international team of researchers led by the Harvard Smithsonian Center for Astrophysics. In their paper just published in The Philosophical Transactions of the Royal Society A., the authors argue that many of the useful and valuable resources on the Moon are concentrated into a modest number (tens) of quite small regions (in the order of a few kilometers). “Once a resource is sufficiently valuable and scarce, disputes are inevitable.” Martin Elvis, a senior astrophysicist at the Harvard Smithsonian Center for Astrophysics and the paper’s lead author, told me. “Whether they become conflicts in the sense of being violent is up to how we choose to govern the Moon.” The authors note that conflicts over access to five prime lunar resources are potential flashpoints: —- Water. Both for life support. And to split into its constituent components of hydrogen and oxygen which can then be liquefied and used as rocket fuel. —- Peaks of Eternal Light. These Peaks are valuable for both the collection of almost continuous solar power, say the authors. And as locations where the approximately 300-degrees-Celsius day-to-night temperature swings of the typical equatorial lunar surface location are mostly avoided, they note. —- Iron. Lunar Iron-rich regions derived from asteroid impacts are some 30–300km across and limited to 20 or so sites, write the authors. However, asteroid iron also has the advantage that it may also be rich in precious metals, including platinum and palladium, they note. And Iron becomes important when building heavy industrial equipment. —- Cold Traps. So-called Cold Traps in the permanently dark craters at the poles are thought to contain volatile materials from the early solar system, including water, write the authors. The floors of such craters have been in almost total darkness for up to 3.5 billion years, they note, illuminated only by starlight and reflections off the nearby rims. Extremely cold (below −180 Celsius), they may be uniquely well-suited sites for far-infrared telescopes, or as a spot to build ultra-cold atom facilities on a far larger scale than on Earth or in laboratories in free space, the authors write. —- And Helium-3. Such lunar sources of Helium-3 will be needed to power fusion nuclear reactors back here on Earth. But such fusion reactors remain a technology whose fruition is still decades in the future. Lunar cold traps located at the South Pole of the moon, are critical to all moon-based operations ... [+] DAVID PAIGE, REPRODUCED WITH PERMISSION. Who might be at loggerheads within the next few years about lunar resources? We are already seeing increasing Chinese and Russian state-led activity, albeit with private sector plug-ins, and a rescheduled NASA program will see a return to the Moon, and to much the same sites that China and Russia are also targeting, Tony Milligan, Senior Researcher at the Cosmological Visionaries project at King’s College London and one of the paper’s co-authors, told me. So, the initial stages of tension development over the coming decade may look like a continuation of the old cold war, albeit with China as a bigger player, he says. And also over the next five years, at least five sovereign nations have credible plans to land on the Moon (China, India-Japan, Russia, USA), write the authors. In addition, several commercial companies (including PTScientists, Moon Express, Astrobotic, Masten, ispace), and the non-profit SpaceIL, have stated intentions to do so, they note. However, Elvis thinks that an initial point of contention could come with the construction of solar power towers. Elvis says that the first lunar human base will need a 100 kW or so. A few 20-meter-high solar panels could supply that power, he says. But because the Sun circles very close to the horizon at the lunar South Pole, at some time during the lunar day one tower will inevitably cast its long shadow on any other towers in the vicinity, says Elvis. To avoid daily lunar blackouts, there will need to be some sort of coordination on where they place their solar power towers, he says. Does the current 1967 Outer Space Treaty (OST) offer guidance in avoiding such conflicts? As Elvis points out, the OST is heavily based on the Antarctic Treaty, with many equivalent points: territorial claims ”on hold”; no military use; no nukes; inspections of facilities consultative meetings of signatories; disputes resolved by negotiation, mediation, and conciliation. “The big difference is that for Antarctica disputes can be sent to the International Court of Justice,” said Elvis. “The OST has no enforcement mechanism.” Can the current outer space treaty be updated? “On the Moon, you don’t need all out war in order for people to be harmed in avoidable ways, you just need pressures to overextend supply lines, and failures to assist in a timely manner,” said Milligan. Thus, some level of tacit coordination will be necessary to avoid problems once the Moon rush begins. Yet coordination will be most effective if it is pursued before actors make difficult-to-reverse commitments to mission designs or substantial investments, Alanna Krolikowski, a political scientist at the Missouri University of Science and Technology (Missouri S&T) and one of the paper’s co-authors, told me. Even so, Elvis is not overly optimistic about any sort of new negotiated outer space treaty. It's hard to see any new treaty being negotiated in today's situation, says Elvis. Not only because of increased nationalism, he says, but also because in 1967 there were really only two players: the U.S.A. and the U.S.S.R. Now there are many, and an increasing number, including commercial companies, says Elvis. Conflict on the Moon itself may begin as a kind of arms race, where one party tries to exclude another from a valuable location, and the response is to find a way to by-pass these ploys, he says. “After a certain point some mechanism to resolve these disputes will be necessary; the alternative is not good,” says Elvis.

#### 6 -- Lack of regulation – no clear metric for what private companies are able to do on the moon guarantees escalation on Earth.

**Milligan 20** [Tony Milligan, 12-9-2020, "Lunar gold rush could create conflict on the ground if we don't act now – new research," Conversation, <https://theconversation.com/lunar-gold-rush-could-create-conflict-on-the-ground-if-we-dont-act-now-new-research-151645>] [pT]

These materials will be of interest both to those trying to establish infrastructure on the Moon and are later targeting Mars as well as commercial exploitation (mining), or science – for example creating telescopic arrays on the lunar far side, away from the growing noise of human communications. How then do we deal with the problem? [The Outer Space Treaty](https://theconversation.com/the-outer-space-treaty-has-been-remarkably-successful-but-is-it-fit-for-the-modern-age-71381) (1967) holds that “the exploration and use of outer space shall be carried out for the benefit and in the interests of all countries and shall be the province of all mankind.” States do not get to claim parts of the Moon as property, but they can still use them. Where this leaves disputes and extraction by private companies is unclear. Proposed successors to the treatment, such as the [Moon Agreement (1979)](https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/intromoon-agreement.html), are seen as too restrictive, requiring a formal framework of laws and an ambitious international regulatory regime. The agreement has failed to gain support among key players, including the US, Russia and China. More recent steps, such as the [Artemis Accords](https://www.nasa.gov/specials/artemis-accords/index.html) – a set of guidelines surrounding the Artemis Program for crewed exploration of the Moon – [are perceived as](https://theconversation.com/artemis-accords-why-many-countries-are-refusing-to-sign-moon-exploration-agreement-148134) heavily tied to the US programme. In the worst case, this lack of framework could lead to heightened tensions on Earth. But it could also create unnecessary duplication of infrastructure, with everyone building their own stuff. That would drive up costs for individual organisations, which they would then have reasons to try to recoup in ways that could compromise opportunities for science and the legacy we leave for future generations.

#### No thumpers -- commercial mining on the moon comes lexically prior to other forms of mining in space **Gilbert 21** [Alex Gilbert is a complex systems researcher and a PhD student in space resources at the Colorado School of Mines. He is a fellow at the Payne Institute at the Colorado School of Mines and is the cofounder of SparkLibrary.] April 26th, 2021, “Mining in Space is Coming,” https://www.milkenreview.org/articles/mining-in-space-is-coming, VM

“The Moon is **a prime space mining target**. Boosted by NASA’s mining solicitation, it is likely the first location for commercial mining. The Moon has **several advantages**. It is relatively close, requiring a journey of **only several days** by rocket and creating communication lags of only a couple seconds — a delay small enough to allow remote operation of robots from Earth. Its low gravity implies that relatively **little energy expenditure** will be needed to deliver mined resources to Earth orbit.”

#### Competition over the moon space explodes geopolitical tensions and escalates through satellite use.

Skibba 18 [Nautilus, “Mining in Space Could Lead to Conflicts on Earth”, Ramin Skibba is a science writer and astrophysicist based in Santa Cruz and San Diego. URL: <https://nautil.us/mining-in-space-could-lead-to-conflicts-on-earth-2-7300/>] KR Recut VM

Major space-faring nations are not among the 16 countries party to the treaty, but they should arguably come to some equitable agreement, since international competition over natural resources in space may very well transform into conflict. Take platinum-group metals. Mining companies have found about 100,000 metric tons of the stuff in deposits worldwide, mostly in South Africa and Russia, amounting to $10 billion worth of production per year, according to the U.S. Geological Survey. These supplies should last several decades if demand for them doesn’t rise dramatically. (According to Bloomberg, supply for platinum-group metals is constrained while demand is increasing.) Palladium, for example, valued for its conductive properties and chemical stability, is used in hundreds of millions of electronic devices sold annually for electrodes and connector platings, but it’s relatively scarce on Earth. A single giant, platinum-rich asteroid could contain as much platinum-group metals as all reserves on Earth, the Google-backed Planetary Resources claims. That’s a massive bounty. As Planetary Resources and other U.S. and foreign companies scramble for control over these valuable space minerals, competing “land grabs” by armed satellites may come next. Platinum-group metals in space may serve the same role as oil has on Earth, threatening to extend geopolitical struggles into astropolitical ones, something Trump is keen on preparing for. Yesterday he said he’s seriously weighing the idea of a “Space Force” military branch. NASA’s increasing collaboration with space mining companies could distort and divert efforts previously focused on space exploration. Moreover, the technology that might enable this free-for-all—versatile “nanosatellites,” no larger than a loaf of bread—is relatively inexpensive. While reporting for a story about these tiny satellites, also known as CubeSats, I came across some missions applicable to mining asteroids. In November, NASA will launch a satellite for a mission called Near-Earth Asteroid Scout, for example. It will deploy a solar sail, propel itself with sunlight, and journey to the asteroid belt, where it will scope out a particular asteroid and analyze its properties. NASA has also awarded grants to Planetary Resources to advance the designs of spectral imagers and propulsion systems for CubeSats, and other missions will develop the satellites’ abilities to communicate and network with each other. NASA also awarded Deep Space Industries contracts to assess commercial approaches for NASA’s asteroid goals, which may involve hosting DSI’s asteroid-prospecting equipment on its missions. Like all forms of mining, it will be dangerous. If space-mining activities break up asteroids, the resulting debris could be hazardous for satellites, other spacecraft, and astronauts nearby. On the other hand, in a best-case scenario, space mining could be environmentally safe, capture only necessary minerals and water, and, in the more distant future even lead to the construction of a far-flung space station led by NASA and other space agencies, orbiting 200 million miles from Earth and serving as both a mining depot and a pit-stop for passing spacecraft. But it’s not clear that a pact between the commercial space mining industry and NASA would align with the public’s interest. NASA’s increasing collaboration with space mining companies could distort and divert efforts previously focused on space exploration andbasicresearch, anddiscourage public interest and engagement in astronomy. For example, Seager advocated for space mining at a science writing conference I attended in 2015. She’s part of a motley group of advisors for Planetary Resources, including the movie director James Cameron, a lawyer for a prominent Washington D.C. firm, and Dante Lauretta, another astronomer whom I respect. Seager seems to believe that encouraging private space mining will lead to more investments and technological innovation that would enable more scientific research. In a 2012 interview with The Atlantic, for instance, she said, “The bottom line is that NASA is not working the best that it could for space science right now, and so in order for people like me to succeed with my own research goals, the commercial space industry needs to be able to succeed independently of government contracts.” But if the U.S. and U.S.-based companies lay claim to the richest and most easily accessible prospecting sites, not allowing other companies and nations to share in the wealth, economic and political relations could be damaged. That’s why this seems to be a dangerous path for space explorers. Once you’re on board with the commercial space industry, then you as a researcher must accept, if not support, everything that comes with it. Seager and a few other researchers may be willing to take this risk, but what about the rest of the space science community? Moreover, to succeed, these businesses will seek profitable missions, while science, exploration, and discovery—goals that stimulate public interest—will inevitably have lower priority. (Other commercial spaceflight companies, like Elon Musk’s SpaceX, do generate public interest, but they’re not directly involved in mining asteroids.) NASA may have its shortcomings, but at least its missions and research goals answer to the public. It’s not exactly a welcome thought to imagine more and more of our presence and activity in space being ceded, with NASA’s help, to private industry.

#### Space wars go nuclear and tensions uniquely spill down to Earth

Grego 18 [Laura, Senior Scientist in the Global Security Program at the Union of Concerned Scientists, Postdoctoral Researcher at the Harvard-Smithsonian Center for Astrophysics, PhD in Experimental Physics at the California Institute of Technology, Space and Crisis Stability, Union of Concerned Scientists, 3-19-18, <https://www.law.upenn.edu/live/files/7804-grego-space-and-crisis-stabilitypdf>]

Why space is a particular problem for crisis stability For a number of reasons, space poses particular challenges in preventing a crisis from starting or from being managed well. Some of these are to do with the physical nature of space, such as the short timelines and difficulty of attribution inherent in space operations. Some are due to the way space is used, such as the entanglement of strategic and tactical missions and the prevalence of dual-use technologies. Some are due to the history of space, such the absence of a shared understanding of appropriate behaviors and consequences, and a dearth of stabilizing personal and institutional relationships. While some of these have terrestrial equivalents, taken together, they present a special challenge. The vulnerability of satellites and first strike incentives Satellites are inherently fragile and difficult to protect; in the language of strategic planners, space is an “offense-dominant” regime. This can lead to a number of pressures to strike first that don‘t exist for other, better-protected domains. Satellites travel on predictable orbits, and many pass repeatedly over all of the earth‘s nations. Low-earth orbiting satellites are reachable by missiles much less capable than those needed to launch satellites into orbit, as well as by directed energy which can interfere with sensors or with communications channels. Because launch mass is at a premium, satellite armor is impractical. Maneuvers on orbit need costly amounts of fuel, which has to be brought along on launch, limiting satellites‘ ability to move away from threats. And so, these very valuable satellites are also inherently vulnerable and may present as attractive targets. Thus, an actor with substantial dependence on space has an incentive to strike first if hostilities look probable, to ensure these valuable assets are not lost. Even if both (or all) sides in a conflict prefer not to engage in war, this weakness may provide an incentive to approach it closely anyway. A RAND Corporation monograph commissioned by the Air Force15 described the issue this way: First-strike stability is a concept that Glenn Kent and David Thaler developed in 1989 to examine the structural dynamics of mutual deterrence between two or more nuclear states.16 It is similar to crisis stability, which Charles Glaser described as ―a measure of the countries‘ incentives not to preempt in a crisis, that is, not to attack first in order to beat the attack of the enemy,‖17 except that it does not delve into the psychological factors present in specific crises. Rather, first strike stability focuses on each side‘s force posture and the balance of capabilities and vulnerabilities that could make a crisis unstable should a confrontation occur. For example, in the case of the United States, the fact that conventional weapons are so heavily dependent on vulnerable satellites may create incentives for the US to strike first terrestrially in the lead up to a confrontation, before its space-derived advantages are eroded by anti-satellite attacks.18 Indeed, any actor for which satellites or space-based weapons are an important part of its military posture, whether for support missions or on-orbit weapons, will feel “use it or lose it” pressure because of the inherent vulnerability of satellites. Short timelines and difficulty of attribution The compressed timelines characteristic of crises combine with these “use it or lose it” pressures to shrink timelines. This dynamic couples dangerously with the inherent difficulty of determining the causes of satellite degradation, whether malicious or from natural causes, in a timely way. Space is a difficult environment in which to operate. Satellites orbit amidst increasing amounts of debris. A collision with a debris object the size of a marble could be catastrophic for a satellite, but objects of that size cannot be reliably tracked. So a failure due to a collision with a small piece of untracked debris may be left open to other interpretations. Satellite electronics are also subject to high levels of damaging radiation. Because of their remoteness, satellites as a rule cannot be repaired or maintained. While on-board diagnostics and space surveillance can help the user understand what went wrong, it is difficult to have a complete picture on short timescales. Satellite failure on-orbit is a regular occurrence19 (indeed, many satellites are kept in service long past their intended lifetimes). In the past, when fewer actors had access to satellite-disrupting technologies, satellite failures were usually ascribed to “natural” causes. But increasingly, even during times of peace operators may assume malicious intent. More to the point, in a crisis when the costs of inaction may be perceived to be costly, there is an incentive to choose the worst-case interpretation of events even if the information is incomplete or inconclusive. Entanglement of strategic and tactical missions During the Cold War, nuclear and conventional arms were well separated, and escalation pathways were relatively clear. While space-based assets performed critical strategic missions, including early warning of ballistic missile launch and secure communications in a crisis, there was a relatively clear sense that these targets were off limits, as attacks could undermine nuclear deterrence. In the Strategic Arms Limitation Treaty, the US and Soviet Union pledged not to interfere with each other‘s ―national technical means‖ of verifying compliance with the agreement, yet another recognition that attacking strategically important satellites could be destabilizing.20 There was also restraint in building the hardware that could hold these assets at risk. However, where the lines between strategic satellite missions and other missions are blurred, these norms can be weakened. For example, the satellites that provide early warning of ballistic missile launch are associated with nuclear deterrent posture, but also are critical sensors for missile defenses. Strategic surveillance and missile warning satellites also support efforts to locate and destroy mobile conventional missile launchers. Interfering with an early warning sensor satellite might be intended to dissuade an adversary from using nuclear weapons first by degrading their missile defenses and thus hindering their first-strike posture. However, for a state that uses early warning satellites to enable a “hair trigger” or launch-on-attack posture, the interference with such a satellite might instead be interpreted as a precursor to a nuclear attack. It may accelerate the use of nuclear weapons rather than inhibit it. Misperception and dual-use technologies Some space technologies and activities can be used both for relatively benign purposes but also for hostile ones. It may be difficult for an actor to understand the intent behind the development, testing, use, and stockpiling of these technologies, and see threats where there are none. (Or miss a threat until it is too late.) This may start a cycle of action and reaction based on misperception. For example, relatively low-mass satellites can now maneuver autonomously and closely approach other satellites without their cooperation; this may be for peaceful purposes such as satellite maintenance or the building of complex space structures, or for more controversial reasons such as intelligence-gathering or anti-satellite attacks. Ground-based lasers can be used to dazzle the sensors of an adversary‘s remote sensing satellites, and with sufficient power, they may damage those sensors. The power needed to dazzle a satellite is low, achievable with commercially available lasers coupled to a mirror which can track the satellite. Laser ranging networks use low-powered lasers to track satellites and to monitor precisely the Earth‘s shape and gravitational field, and use similar technologies. 21 Higher-powered lasers coupled with satellite-tracking optics have fewer legitimate uses. Because midcourse missile defense systems are intended to destroy long-range ballistic missile warheads, which travel at speeds and altitudes comparable to those of satellites, such defense systems also have inherent ASAT capabilities. In fact, while the technologies being developed for long-range missile defenses might not prove very effective against ballistic missiles—for example, because of the countermeasure problems associated with midcourse missile defense— they could be far more effective against satellites. This capacity is not just theoretical. In 2007, China demonstrated a direct-ascent anti-satellite capability which could be used both in an ASAT and missile defense role, and in 2009, the United States used a ship-based missile defense interceptor to destroy a satellite, as well. US plans indicated a projected inventory of missile defense interceptors with capability to reach all low earth orbiting satellites in the dozens in the 2020s, and in the hundreds by 2030.22 Discrimination The consequences of interfering with a satellite may be vastly different depending on who is affected and how, and whether the satellite represents a legitimate military objective. However, it will not always be clear who the owners and operators of a satellite are, and users of a satellite‘s services may be numerous and not public. Registration of satellites is incomplete23 and current ownership is not necessarily updated in a readily available repository. The identification of a satellite as military or civilian may be deliberately obscured. Or its value as a military asset may change over time; for example, the share of capacity of a commercial satellite used by military customers may wax and wane. A potential adversary‘s satellite may have different or additional missions that are more vital to that adversary than an outsider may perceive. An ASAT attack that creates persistent debris could result in significant collateral damage to a wide range of other actors; unlike terrestrial attacks, these consequences are not limited geographically, and could harm other users unpredictably. In 2015, the Pentagon‘s annual wargame**,** or simulated conflict, involving space assets focused on a future regional conflict. The official report out24warnedthatit was hard to keep the conflict contained geographically when using anti-satellite weapons: As the wargame unfolded, a regional crisis quickly escalated, partly because of the interconnectedness of a multi-domain fight involving a capable adversary. The wargame participants emphasized the challenges in containing horizontal escalation once space control capabilities are employedto achieve limited national objectives. Lack of shared understanding of consequences/proportionalityStates havefairly similar understandings of the implications of military actions on the ground, in the air, and at sea,built over decades of experience. The United States and the Soviet Union/Russia have built some shared understanding of each other‘s strategic thinking on nuclear weapons, though this is less true for other states with nuclear weapons. But in the context of nuclear weapons, there is an arguable understanding about the crisis escalation based on the type of weapon (strategic or tactical) and the target (counterforce—against other nuclear targets, or countervalue—against civilian targets). Because of a lack of experience in hostilities that target space-based capabilities, it is not entirely clear what the proper response to a space activity is and where the escalation thresholds or “red lines” lie. Exacerbating this is the asymmetry in space investments; not all actors will assign the same value to a given target or same escalatory nature to different weapons.

#### Nuclear war causes extinction.

Starr 17 (Steven; director of the University of Missouri’s Clinical Laboratory Science Program, senior scientist at the Physicians for Social Responsibility, Associate member of the Nuclear Age Peace Foundation, expert in the environmental consequences of nuclear war; 1/9/17; “Turning a Blind Eye Towards Armageddon — U.S. Leaders Reject Nuclear Winter Studies”; <https://fas.org/2017/01/turning-a-blind-eye-towards-armageddon-u-s-leaders-reject-nuclear-winter-studies/>; Federation of American Scientists; accessed 11/24/18; TV) [AV]

The detonation of an atomic bomb with this explosive power will **instantly ignite fires** over a surface area of three to five square miles. In the recent studies, the scientists calculated that the **blast**, **fire**, and **radiation** from a war fought with 100 atomic bombs could produce **direct fatalities** comparable to all of those worldwide in World War II, or to those once estimated for a “**counterforce**” **nuclear war** between the superpowers. However, the **long-term environmental effects** of the war **could** significantly disrupt the global weather for at least a decade, which would likely **result in** a vast **global famine**. The scientists predicted that **nuclear firestorms** in the burning cities would cause at least five million tons of **black carbon smoke** to quickly rise above cloud level into the stratosphere, where it could not be rained out. The smoke would circle the Earth in **less than two weeks** and would form **a** global **stratospheric smoke layer** that **would remain for** more than **a decade**. The smoke would absorb warming sunlight, which would **heat the smoke** to temperatures near the boiling point of water, producing **ozone losses of** 20 to **50 percent** over populated areas. This would almost double the amount of UV-B reaching the most populated regions of the mid-latitudes, and it would create UV-B indices unprecedented in human history. In North America and Central Europe, the time required to get a painful sunburn at mid-day in June could decrease to as little as six minutes for fair-skinned individuals. As the smoke layer blocked warming sunlight from reaching the Earth’s surface, it would produce the **coldest** average **surface temperatures** in the last 1,000 years. The scientists calculated that global **food production would decrease** by 20 to **40 percent** during a five-year period following such a war. Medical experts have predicted that the shortening of growing seasons and corresponding decreases in agricultural production could cause up to **two billion** people to perish from **famine**. The climatologists also investigated the effects of a nuclear war fought with the vastly more powerful modern **thermonuclear** weapons possessed by the United States, Russia, China, France, and England. Some of the thermonuclear weapons constructed during the 1950s and 1960s were 1,000 times more powerful than an atomic bomb. During the last 30 years, the average size of thermonuclear or “strategic” nuclear weapons has decreased. Yet today, each of the approximately 3,540 strategic weapons deployed by the United States and Russia is seven to **80 times** more powerful than the atomic bombs modeled in the India-Pakistan study. The smallest strategic nuclear weapon has an explosive power of **100,000 tons of TNT**, compared to an atomic bomb with an average explosive power of 15,000 tons of TNT. Strategic nuclear weapons produce much larger nuclear firestorms than do atomic bombs. For example, a standard Russian 800-kiloton warhead, on an average day, will ignite fires covering a surface area of 90 to 152 square miles. A **war** fought with hundreds or thousands of U.S. and Russian strategic nuclear weapons would **ignite immense** **nuclear firestorms** covering land surface areas of many thousands or **tens of thousands** of square miles. The scientists calculated that these fires would produce up to **180 million tons** of black carbon soot and **smoke**, which would form a dense, **global stratospheric smoke layer**. The smoke would remain in the stratosphere for 10 to **20 years**, and it **would block** as much as **70 percent of sunlight** from reaching the surface of the Northern Hemisphere and 35 percent from the Southern Hemisphere. So much sunlight would be blocked by the smoke that the noonday sun would resemble a full moon at midnight. Under such conditions, it would only require a matter of days or weeks for daily minimum **temperatures** to **fall below freezing** in the largest agricultural areas of the Northern Hemisphere, where freezing temperatures would occur every day for a period of between one to more than two years. Average surface temperatures would become colder than those experienced 18,000 years ago at the height of the last Ice Age, and the prolonged cold would cause average rainfall to decrease by up to 90%. Growing seasons would be completely eliminated for more than a decade; it would be **too cold and dark** to grow food crops, **which would doom the** majority of the **human population.** NUCLEAR WINTER IN BRIEF The profound cold and darkness following nuclear war became known as nuclear winter and was first predicted in 1983 by a group of NASA scientists led by Carl Sagan. During the mid-1980s, a large body of research was done by such groups as the Scientific Committee on Problems of the Environment (SCOPE), the World Meteorological Organization, and the U.S. National Research Council of the U.S. National Academy of Sciences; their work essentially supported the initial findings of the 1983 studies. The idea of nuclear winter, published and supported by prominent scientists, generated extensive public alarm and put political pressure on the United States and Soviet Union to reverse a runaway nuclear arms race, which, by 1986, had created a global nuclear arsenal of more than 65,000 nuclear weapons. Unfortunately, this created a backlash among many powerful military and industrial interests, who undertook an extensive media campaign to brand nuclear winter as “bad science” and the scientists who discovered it as “irresponsible.” Critics used various uncertainties in the studies and the first climate models (which are primitive by today’s standards) as a basis to criticize and reject the concept of nuclear winter. In 1986, the Council on Foreign Relations published an article by scientists from the National Center for Atmospheric Research, who predicted drops in global cooling about half as large as those first predicted by the 1983 studies and described this as a “nuclear autumn.”

### 1AC - Framework

#### The standard is maximizing expected well-being. 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.**

**2 -- Lexical pre-req: Threats to bodily security and life preclude the ability for moral actors to effectively utilize and act upon other moral theories since they are in a constant state of crisis that inhibit the ideal moral conditions which other theories presuppose**

#### 3 -- Degrees of wrongness—if I break a promise to meet up for lunch, that is not as bad as breaking a promise to take a dying person to the hospital. Only the consequences of breaking the promise explain why the second one is much worse than the first. Intuitions outweigh—they’re the foundational basis for any argument and theories that contradict our intuitions are most likely false even if we can’t deductively determine why.

#### 4 -- Extinction comes first!

**Pummer 15** [Theron, Junior Research Fellow in Philosophy at St. Anne's College, University of Oxford. “Moral Agreement on Saving the World” Practical Ethics, University of Oxford. May 18, 2015] AT

There appears to be lot of disagreement in moral philosophy. Whether these many apparent disagreements are deep and irresolvable, I believe there is at least one thing it is reasonable to agree on right now, whatever general moral view we adopt: that it is very important to reduce the risk that all intelligent beings on this planet are eliminated by an enormous catastrophe, such as a nuclear war. How we might in fact try to reduce such existential risks is discussed elsewhere. My claim here is only that we – whether we’re consequentialists, deontologists, or virtue ethicists – should all agree that we should try to save the world. According to consequentialism, we should maximize the good, where this is taken to be the goodness, from an impartial perspective, of outcomes. Clearly one thing that makes an outcome good is that the people in it are doing well. There is little disagreement here. If the happiness or well-being of possible future people is just as important as that of people who already exist, and if they would have good lives, it is not hard to see how reducing existential risk is easily the most important thing in the whole world. This is for the familiar reason that there are so many people who could exist in the future – there are trillions upon trillions… upon trillions. There are so many possible future people that reducing existential risk is arguably the most important thing in the world, even if the well-being of these possible people were given only 0.001% as much weight as that of existing people. Even on a wholly person-affecting view – according to which there’s nothing (apart from effects on existing people) to be said in favor of creating happy people – the case for reducing existential risk is very strong. As noted in this seminal paper, this case is strengthened by the fact that there’s a good chance that many existing people will, with the aid of life-extension technology, live very long and very high quality lives. You might think what I have just argued applies to consequentialists only. There is a tendency to assume that, if an argument appeals to consequentialist considerations (the goodness of outcomes), it is irrelevant to non-consequentialists. But that is a huge mistake. Non-consequentialism is the view that there’s more that determines rightness than the goodness of consequences or outcomes; it is not the view that the latter don’t matter. Even John Rawls wrote, “All ethical doctrines worth our attention take consequences into account in judging rightness. One which did not would simply be irrational, crazy.” Minimally plausible versions of deontology and virtue ethics must be concerned in part with promoting the good, from an impartial point of view. They’d thus imply very strong reasons to reduce existential risk, at least when this doesn’t significantly involve doing harm to others or damaging one’s character. What’s even more surprising, perhaps, is that even if our own good (or that of those near and dear to us) has much greater weight than goodness from the impartial “point of view of the universe,” indeed even if the latter is entirely morally irrelevant, we may nonetheless have very strong reasons to reduce existential risk. Even egoism, the view that each agent should maximize her own good, might imply strong reasons to reduce existential risk. It will depend, among other things, on what one’s own good consists in. If well-being consisted in pleasure only, it is somewhat harder to argue that egoism would imply strong reasons to reduce existential risk – perhaps we could argue that one would maximize her expected hedonic well-being by funding life extension technology or by having herself cryogenically frozen at the time of her bodily death as well as giving money to reduce existential risk (so that there is a world for her to live in!). I am not sure, however, how strong the reasons to do this would be. But views which imply that, if I don’t care about other people, I have no or very little reason to help them are not even minimally plausible views (in addition to hedonistic egoism, I here have in mind views that imply that one has no reason to perform an act unless one actually desires to do that act). To be minimally plausible, egoism will need to be paired with a more sophisticated account of well-being. To see this, it is enough to consider, as Plato did, the possibility of a ring of invisibility – suppose that, while wearing it, Ayn could derive some pleasure by helping the poor, but instead could derive just a bit more by severely harming them. Hedonistic egoism would absurdly imply she should do the latter. To avoid this implication, egoists would need to build something like the meaningfulness of a life into well-being, in some robust way, where this would to a significant extent be a function of other-regarding concerns (see chapter 12 of this classic intro to ethics). But once these elements are included, we can (roughly, as above) argue that this sort of egoism will imply strong reasons to reduce existential risk. Add to all of this Samuel Scheffler’s recent intriguing arguments (quick podcast version available here) that most of what makes our lives go well would be undermined if there were no future generations of intelligent persons. On his view, my life would contain vastly less well-being if (say) a year after my death the world came to an end. So obviously if Scheffler were right I’d have very strong reason to reduce existential risk. We should also take into account moral uncertainty. What is it reasonable for one to do, when one is uncertain not (only) about the empirical facts, but also about the moral facts? I’ve just argued that there’s agreement among minimally plausible ethical views that we have strong reason to reduce existential risk – not only consequentialists, but also deontologists, virtue ethicists, and sophisticated egoists should agree. But even those (hedonistic egoists) who disagree should have a significant level of confidence that they are mistaken, and that one of the above views is correct. Even if they were 90% sure that their view is the correct one (and 10% sure that one of these other ones is correct), they would have pretty strong reason, from the standpoint of moral uncertainty, to reduce existential risk. Perhaps most disturbingly still, even if we are only 1% sure that the well-being of possible future people matters, it is at least arguable that, from the standpoint of moral uncertainty, reducing existential risk is the most important thing in the world. Again, this is largely for the reason that there are so many people who could exist in the future – there are trillions upon trillions… upon trillions. (For more on this and other related issues, see this excellent dissertation). Of course, it is uncertain whether these untold trillions would, in general, have good lives. It’s possible they’ll be miserable. It is enough for my claim that there is moral agreement in the relevant sense if, at least given certain empirical claims about what future lives would most likely be like, all minimally plausible moral views would converge on the conclusion that we should try to save the world. While there are some non-crazy views that place significantly greater moral weight on avoiding suffering than on promoting happiness, for reasons others have offered (and for independent reasons I won’t get into here unless requested to), they nonetheless seem to be fairly implausible views. And even if things did not go well for our ancestors, I am optimistic that they will overall go fantastically well for our descendants, if we allow them to. I suspect that most of us alive today – at least those of us not suffering from extreme illness or poverty – have lives that are well worth living, and that things will continue to improve. Derek Parfit, whose work has emphasized future generations as well as agreement in ethics, described our situation clearly and accurately: “We live during the hinge of history. Given the scientific and technological discoveries of the last two centuries, the world has never changed as fast. We shall soon have even greater powers to transform, not only our surroundings, but ourselves and our successors. If we act wisely in the next few centuries, humanity will survive its most dangerous and decisive period. Our descendants could, if necessary, go elsewhere, spreading through this galaxy…. Our descendants might, I believe, make the further future very good. But that good future may also depend in part on us. If our selfish recklessness ends human history, we would be acting very wrongly.” (From chapter 36 of On What Matters)