## 1

### 1NC—OFF

#### First off is topicality

#### Interpretation: Topical affirmatives may not defend removal of space debris.

#### “Appropriation of outer space” by private entities refers to the exercise of exclusive control of space.

TIMOTHY JUSTIN TRAPP, JD Candidate @ UIUC Law, ’13, TAKING UP SPACE BY ANY OTHER MEANS: COMING TO TERMS WITH THE NONAPPROPRIATION ARTICLE OF THE OUTER SPACE TREATY UNIVERSITY OF ILLINOIS LAW REVIEW [Vol. 2013 No. 4]

The issues presented in relation to the nonappropriation article of the Outer Space Treaty should be clear.214 The ITU has, quite blatantly, created something akin to “property interests in outer space.”215 It allows nations to exclude others from their orbital slots, even when the nation is not currently using that slot.216 This is directly in line with at least one definition of outer-space appropriation.217 [\*\*Start Footnote 217\*\*Id. at 236 (“Appropriation of outer space, therefore, is ‘the exercise of exclusive control or exclusive use’ with a sense of permanence, which limits other nations’ access to it.”) (quoting Milton L. Smith, The Role of the ITU in the Development of Space Law, 17 ANNALS AIR & SPACE L. 157, 165 (1992)). \*\*End Footnote 217\*\*]The ITU even allows nations with unused slots to devise them to other entities, creating a market for the property rights set up by this regulation.218 In some aspects, this seems to effect exactly what those signatory nations of the Bogotá Declaration were trying to accomplish, albeit through different means.219

#### Private appropriation of extracted space resources is distinct from appropriation “of” outer space. Despite longstanding permission of appropriation of extracted resources, sovereign claims are still universally prohibited.

Abigail D. Pershing, J.D. Candidate @ Yale, B.A. UChicago,’19, "Interpreting the Outer Space Treaty's Non-Appropriation Principle: Customary International Law from 1967 to Today," Yale Journal of International Law 44, no. 1

II. THE FIRST SHIFT IN CUSTOMARY INTERNATIONAL LAW’S INTERPRETATION OF THE NON-APPROPRIATION PRINCIPLE Since the drafting of the Outer Space Treaty, several States have chosen to reinterpret the non-appropriation principle as narrower in scope than its drafters originally intended. This reinterpretation has gone largely unchallenged and has in fact been widely adopted by space-faring nations. In turn, this has had the effect of changing customary international law relating to the non-appropriation principle. Shifting away from its original blanket application in 1967, States have carved out an exception to the non-appropriation principle, allowing appropriation of extracted space resources.53 This Part examines this shift in the context of the two branches of the United Nation’s customary international law standard: State practice and opinio juris. A. State Practice The earliest hint of a change in customary international law relating to the interpretation of the non-appropriation clause came in 1969, when the United States first sent astronauts to the moon. As part of his historic journey, astronaut Neil Armstrong collected moonrocks that he brought back with him to Earth and promptly handed off to the National Aeronautics and Space Administration (NASA) as U.S. property.54 Later, the USSR similarly claimed lunar material as government property, some of which was eventually sold to private citizens. 55 These first instances of space resource appropriation did not draw much attention, but they presented a distinct shift marking the beginning of a new period in State practice. Having previously been limited by their technological capabilities, States could now establish new practices with respect to celestial bodies. This was the beginning of a pattern of appropriation that slowly unfolded over the next few decades and has since solidified into the general and consistent State practice necessary to establish the existence of customary international law. Currently, the U.S. government owns 842 pounds of lunar material.56 There is little question that NASA and the U.S. government consider this material, as well as other space materials collected by American astronauts, to be government property.57 In fact, NASA explicitly endorses U.S. property rights over these moon rocks, stating that “[l]unar material retrieved from the Moon during the Apollo Program is U.S. government property.”5 The U.S. delegation’s reaction to the language of the 1979 Moon Agreement further cemented this interpretation that appropriation of extracted resources is a permissible exception to the non-appropriation clause of Article II. Although the United States is not a party to the Moon Agreement, it did participate in the negotiations.59 The Moon Agreement states in relevant part: Neither the surface nor the subsurface of the moon, nor any part thereof or natural resources in place, shall become property of any State, international intergovernmental or nongovernmental organization, national organization or nongovernmental entity or of any natural person.60 In response to this language, the U.S. delegation made a statement laying out the American view that the words “in place” imply that private property rights apply to extracted resources61—a comment that went completely unchallenged. That all States seemed to accept this point, even those bound by the Moon Agreement, is further evidence of a shift in customary international law.62 B. Opinio Juris: Domestic Legislation Domestic law, both in the United States and abroad, provides further evidence of the shift in customary international law surrounding the issue of nonappropriation as it relates to extracted space resources. Domestic U.S. space law is codified at Section 51 of the U.S. Code and has been regularly modified to expand private actors’ rights in space.63 Beginning in 1984, the Commercial Space Launch Act provided that “the United States should encourage private sector launches and associated services.”64 The goal of the 1984 Act was to support commercial space launches by private companies and individuals.65 It did not, however, specifically discuss commercial exploitation of space. The first such mention of commercial use of space appeared in 2004, with the Commercial Space Launch Amendments Act.66 This Act specifically aimed at regulating space tourism but did not explicitly guarantee any private rights in space.67 The most significant change in U.S. space law came with the passage of the Spurring Private Aerospace Competitiveness and Entrepreneurship (SPACE) Act in 2015. As incorporated into Section 51 of the Code, this Act provides: A United States citizen engaged in commercial recovery of an asteroid resource or a space resource under this chapter shall be entitled to any asteroid resource or space resource obtained, including to possess, own, transport, use, and sell the asteroid resource or space resource obtained in accordance with applicable law, including the international obligations of the United States.68 Whereas the idea that private corporations might go into space may have seemed far-fetched to the drafters of the Outer Space Treaty, the SPACE Act of 2015 was the first instance of a government recognizing such a trend and officially supporting private companies’ commercial rights to space resources under law. With the new 2015 amendment to Section 51 in place, U.S. companies can now rest assured that any profits they reap from space mining are firmly legal—at least within U.S. jurisdictions. Although the United States was the first country to officially reinterpret the non-appropriation principle, other countries are following suit. On July 20, 2017, Luxembourg passed a law entitled On the Exploration and Utilization of Space Resources with a vote of fifty-five to two.69 The law took effect on August 1, 2017.70 Article 1 of the new law states simply that “[s]pace resources can be appropriated,” and Article 3 expressly grants private companies permission to explore and use space resources for commercial purposes.71 Official commentary on the law establishes that its goal is to provide companies with legal certainty regarding ownership over space materials—a goal that the commentators regard as legal under the Outer Space Treaty despite the non-appropriation principle.72 The next country to enact similar legislation may be the United Arab Emirates (UAE). According to the UAE Space Agency director general, Mohammed Al Ahbabi, the UAE is currently in the process of drafting a space law covering both human space exploration and commercial activities such as mining.73 To further this goal, in 2017 the UAE set up the Space Agency Working Group on Space Policy and Law to specify the procedures, mechanisms, and other standards of the space sector, including an appropriate legal framework.74 C. Opinio Juris: Legal Scholarship Other major space powers are also considering similar laws in the future, including Japan, China, and Australia. 75 Senior officials within China’s space program have explicitly stated that the country’s goal is to explore outer space and to take advantage of outer space resources.76 The general international trend clearly points in this direction in anticipation of a potential “space gold rush.” 7 Mirroring the shift in State practice and domestic laws, the legal community has also changed its approach to the interpretation of the nonappropriation principle. Whereas at the time of the ratification of the Outer Space Treaty the majority of legal scholars tended to apply the non-appropriation principle broadly, most legal scholars now view appropriation of extracted materials as permissible.78 Brandon Gruner underscores that this new view is historically distinct from prior legal interpretation, noting that modern interpretations of the Outer Space Treaty’s non-appropriation principle differ from those of the Treaty’s authors.79 In contrast to earlier legal theory that denied the possibility of appropriation of any space resources, scholars now widely accept that extracting space resources from celestial bodies is a “use” permitted by the Outer Space Treaty and that extracted materials become the property of the entity that performed the extraction.80 Stressing the fact that the Treaty does not explicitly prohibit appropriating resources from outer space, other authors conclude that the use of extracted space resources is permitted, meaning that the new SPACE Act is a plausible interpretation of the Outer Space Treaty.81 However, scholars have been careful to cabin the extent to which they accept the legality of appropriation. For instance, although Thomas Gangale and Marilyn Dudley-Rowley acknowledge the legality of private appropriation of extracted space resources, they nonetheless emphasize that “[o]wnership of and the right to use extraterrestrial resources is distinct from ownership of real property” and that any such claim to real property is illegal.82 Lawrence Cooper is also careful to point out this distinction: “[t]he [Outer Space] Treaties recognize sovereignty over property placed into space, property produced in space, and resources removed from their place in space, but ban sovereignty claims by states; international law extends this ban to individuals.”83 Although there remain some scholars who still insist on the illegality of the 2015 U.S. law and State appropriation of space resources generally,84 their dominance has waned since the 1960s. These scholars are now a minority in the face of general acceptance among the legal community that minerals and other space resources, once extracted, may be legally claimed as property. 85 Taken together, the elements described above—statements made in the international arena, de facto appropriation of space resources in the form of moon rocks, the adoption of new national policies permitting appropriation of extracted space resources, and the weight of the international legal community’s opinion— indicate a fundamental shift in customary international law. The Outer Space Treaty’s non-appropriation clause has been redefined via customary international law norms from its broad application to now include a carve-out allowing appropriation of space resources once such resources have been extracted.

#### Common usage also concludes appropriation is the taking of or exercise of control over property

Bohm 13 [JEFF BOHM, Chief Judge. In re Cowin, 492 B.R. 858 (Bankr. S.D. Tex. 2013).] TDI

1. Application of the Facts in the Instant Disputes to Embezzlement under Section 523(a)(4)

(i) "The Debtor appropriated funds." "Appropriation" is defined as "the exercise of control over property; a taking of possession." BLACK'S LAW DICTIONARY 98 (7th ed. 1999). In connection with its analysis under the TTLA in section C.2.b., supra, this Court has determined that the Debtor appropriated the excess proceeds from the foreclosure sales of the Countrywide Property, the Chase Property, and the WMC Property that rightfully belonged to the Plaintiffs. Not only did the Debtor control the disposition of the excess proceeds via the WCL and Dampkring Deeds of Trust, but he ensured that the proceeds were deposited to Perc and TRH, entities controlled by his co-conspirator Allan Groves. Thus, the first element is satisfied.

(ii) "The appropriation was for the Debtor's use or benefit." This element does not require a showing that the Debtor himself personally benefitted by the amounts that the Plaintiffs were damaged. For example, in affirming a bankruptcy court's decision that a debt was nondischargeable due to embezzlement under section 523(a)(4), the Sixth Circuit stated:

#### Court precedent affirms appropriation is permanent occupation not temporary use.

Marshall 82 [JUSTICE MARSHALL delivered the opinion of the Court. Loretto v. Teleprompter Manhattan CATV Corp., 458 US 419 - Supreme Court 1982] TDI

Since these early cases, this Court has consistently distinguished between flooding cases involving a permanent physical occupation, on the one hand, and cases involving a more temporary invasion, or government action outside the owner's property that causes consequential damages within, on the other. A taking has always been found only in the former situation. See United States v. Lynah, 188 U. S. 445, 468-470 (1903); Bedford v. United States, 192 U. S. 217, 225 (1904); United States v. Cress, 243 U. S. 316, 327-328 (1917); Sanguinetti v. United States, 264 U. S. 146, 149 (1924) (to be a taking, flooding must "constitute an actual, permanent invasion of the land, amounting to an appropriation of, and not merely an injury to, the property"); United States v. Kansas City Life Ins. Co., 339 U. S. 799, 809-810 (1950). In St. Louis v. Western Union Telegraph Co., 148 U. S. 92 (1893), the Court applied the principles enunciated in Pumpelly to a situation closely analogous to the one presented today. In that case, the Court held that the city of St. Louis could exact reasonable compensation for a telegraph company's placement of telegraph poles on the city's public streets. The Court reasoned: "The use which the [company] makes of the streets is an exclusive and permanent one, and not one temporary, shifting and in common with the general public. The ordinary traveler, whether on foot or in a vehicle, passes to and fro along the streets, and his use and occupation 429\*429 thereof are temporary and shifting. The space he occupies one moment he abandons the next to be occupied by any other traveller. . . . But the use made by the telegraph company is, in respect to so much of the space as it occupies with its poles, permanent and exclusive. It as effectually and permanently dispossesses the general public as if it had destroyed that amount of ground. Whatever benefit the public may receive in the way of transportation of messages, that space is, so far as respects its actual use for purposes of highway and personal travel, wholly lost to the public. . . . ..... ". . . It matters not for what that exclusive appropriation is taken, whether for steam railroads or street railroads, telegraphs or telephones, the state may if it chooses exact from the party or corporation given such exclusive use pecuniary compensation to the general public for being deprived of the common use of the portion thus appropriated." Id., at 98-99, 101-102 (emphasis added).[6] Similarly, in Western Union Telegraph Co. v. Pennsylvania R. Co., 195 U. S. 540 (1904), a telegraph company constructed and operated telegraph lines over a railroad's right of way. In holding that federal law did not grant the company the right of eminent domain or the right to operate the lines absent the railroad's consent, the Court assumed that 430\*430 the invasion of the telephone lines would be a compensable taking. Id., at 570 (the right-of-way "cannot be appropriated in whole or in part except upon the payment of compensation"). Later cases, relying on the character of a physical occupation, clearly establish that permanent occupations of land by such installations as telegraph and telephone lines, rails, and underground pipes or wires are takings even if they occupy only relatively insubstantial amounts of space and do not seriously interfere with the landowner's use of the rest of his land. See, e. g., Lovett v. West Va. Central Gas Co., 65 W. Va. 739, 65 S. E. 196 (1909); Southwestern Bell Telephone Co. v. Webb, 393 S. W. 2d 117, 121 (Mo. App. 1965). Cf. Portsmouth Harbor Land & Hotel Co. v. United States, 260 U. S. 327 (1922). See generally 2 J. Sackman, Nichols' Law of Eminent Domain § 6.21 (rev. 3d ed. 1980).[7] More recent cases confirm the distinction between a permanent physical occupation, a physical invasion short of an occupation, and a regulation that merely restricts the use of property. In United States v. Causby, 328 U. S. 256 (1946), the Court ruled that frequent flights immediately above a landowner's property constituted a taking, comparing such overflights to the quintessential form of a taking: "If, by reason of the frequency and altitude of the flights, respondents could not use this land for any purpose, their loss would be complete. It would be as complete as if the United States had entered upon the surface of the land and taken exclusive possession of it." Id., at 261 (footnote omitted). 431\*431 As the Court further explained, "We would not doubt that, if the United States erected an elevated railway over respondents' land at the precise altitude where its planes now fly, there would be a partial taking, even though none of the supports of the structure rested on the land. The reason is that there would be an intrusion so immediate and direct as to subtract from the owner's full enjoyment of the property and to limit his exploitation of it." Id., at 264-265. The Court concluded that the damages to the respondents "were not merely consequential. They were the product of a direct invasion of respondents' domain." Id., at 265-266. See also Griggs v. Allegheny County, 369 U. S. 84 (1962). Two wartime takings cases are also instructive. In United States v. Pewee Coal Co., 341 U. S. 114 (1951), the Court unanimously held that the Government's seizure and direction of operation of a coal mine to prevent a national strike of coal miners constituted a taking, though members of the Court differed over which losses suffered during the period of Government control were compensable. The plurality had little difficulty concluding that because there had been an "actual taking of possession and control," the taking was as clear as if the Government held full title and ownership. Id., at 116 (plurality opinion of Black, J., with whom Frankfurter, Douglas, and Jackson, JJ., joined; no other Justice challenged this portion of the opinion). In United States v. Central Eureka Mining Co., 357 U. S. 155 (1958), by contrast, the Court found no taking where the Government had issued a wartime order requiring nonessential gold mines to cease operations for the purpose of conserving equipment and manpower for use in mines more essential to the war effort. Over dissenting Justice Harlan's complaint that "as a practical matter the Order led to consequences no different from those that would have followed the temporary acquisition of physical possession of these mines by the United States," id., at 181, the Court reasoned that "the Government did not occupy, 432\*432 use, or in any manner take physical possession of the gold mines or of the equipment connected with them." Id., at 165-166. The Court concluded that the temporary though severe restriction on use of the mines was justified by the exigency of war.[8] Cf. YMCA v. United States, 395 U. S. 85, 92 (1969) ("Ordinarily, of course, government occupation of private property deprives the private owner of his use of the property, and it is this deprivation for which the Constitution requires compensation").

#### Violation: all of their contentions are about space debris.

#### Standards:

#### Vote neg for limits and ground: the aff interpretation explodes the topic to allow any aff about extracting resources which structurally alters the neg research burden because there’s a qualitative difference between appropriation of outer space and of resources. That alters neg ground because it means the aff can defend trivial middle grounds that go beyond just exclusive appropriation unbalancing the topic.

#### Precision outweighs—determines what we prepare for which controls the internal link to any pragmatic benefits of the activity

#### Topicality is DTD cine it indicts the aff’s entire advocacy.

#### Competing interpretations: reasonability is arbitrary and causes a race to the bottom because the neg doesn’t know what constitutes a “reasonable” interp when doing prep. It also collapses to competing interps because you use offense defense to determine that reasonability is good.

#### No RVIs—T is an aff burden just like inherency. It also causes a chilling effect on legitimate topicality arguments which causes proliferation of questionably topical cases.

T> 1ar theory—indicts the aff, lexically prior, and abuse is self inflicted—T outweighs on normsetting only 2 months to set topic

## 2

### 1NC—OFF

#### Next off is the NC

#### The meta-ethic is procedural moral realism - substantive realism holds that moral truths exist independently of that in the empirical world. Prefer procedural realism –

#### [1] Uncertainty – our experiences are inaccessible to others which allows people to say they don’t experience the same, however a priori principles are universally applied to all agents.

#### Our relation to how we establish ethics is lexically prior to consequences – there are intrinsic values that make it such the means can never justify the ends.

**Vallentyne 6** Peter is a Professor of Philosophy at the University of Missouri in Columbia, Missouri. [“Against Maximizing Act-Consequentialism” mospace.umsystem.edu/xmlui/bitstream/handle/10355/10174/AgainstMaximizingActConsequentialism.pdf?sequence=1.]//Mberhe

Core consequentialism holds that the permissibility of actions supervenes on (is fully determined by), and is positively sensitive to, the value of their consequences. This does not require valuemaximization; it only requires value promotion, where the relevant value is that of the 14 consequences. I shall argue that core consequentialism, at least in its standard forms, is mistaken. The ends do not always justify the means. If core consequentialism is true, then any action with maximally good consequences (in a given choice situation) is permissible. The main argument in favor of this claim is the following: P1: An action is morally permissible if it is best supported by insistent moral reasons for action. P2: The value of consequences is always an insistent moral reason for action. P3: The value of consequences is the only insistent moral reason for action. C: Thus, an action is morally permissible if it maximizes the value of consequences. This is the same argument given in the previous section for the impermissibility of actions that do not have maximally good consequences, except that (1) the appeal to insistent reasons has been made explicit, (2) the necessary conditions of the original P1 and C have been converted to sufficient conditions, and (3) the qualification in P3 that allowed the possibility of some prior constraints has been dropped. P1 is highly plausible. An action that is best supported by insistent moral reasons is surely permissible. P2 can be challenged, as I did earlier, on the ground that beyond some point the value of consequences ceases to be an insistent moral reason (once consequences are good enough, their value may only be a non-insistent reason). For the present purposes, however, we can grant this claim. The crucial claim is P3. It is implausible, because there are insistent moral reasons other than the value of consequences. There are also deontological insistent reasons, and these, or at least some of these, are lexical prior to the value of consequences. In particular, individuals have certain rights that may not be infringed simply because the consequences are better. Unlike prudential rationality, morality involves many distinct centers of will (choice) or 15 interests, and these cannot simply be lumped together and traded off against each other.16 The basic problem with standard versions of core consequentialism is that they fail to recognize adequately the normative separateness of persons. Psychological autonomous beings (as well, perhaps, as other beings with moral standing) are not merely means for the promotion of value. They must be respected and honored, and this means that at least sometimes certain things may not be done to them, even though this promotes value overall. An innocent person may not be killed against her will, for example, in order to make a million happy people slightly happier. This would be sacrificing her for the benefit of others. The claim here is that there are some constraints on how value may be promoted. The ends do not always justify the means. Moreover, these constraints, as I shall explain below, are grounded in the normative separateness of persons.17 Constraints may be personal or impersonal. An impersonal constraint against killing, for example, prohibits killing, independently of whether this is in the killed person’s interests and independently of whether she has consented to it (i.e., is in conformance with her will). It would rule out, for example, well-informed suicide, voluntary euthanasia, and non-voluntary euthanasia where an incompetent individual is terminally ill and likely to be in great pain for the remainder of her life. Although impersonal constraints do reflect a normative separateness of individuals, they do not do so, I believe, in the relevant manner. They fail to capture the respect due to persons. Persons (beings that are protected by morality for their own sake) have interests and often autonomous wills. Any constraint against treating a person in a specified way that applies even when the holder validly consents to such treatment and such treatment is in the holder’s interest fails to reflect the respect due to that person. Impersonal constraints fail to reflect this respect, and I agree with core consequentialism’s rejection of such constraints. Constraints can, however, be personal. A personal constraint empowers the protected 16 individual, and makes the prohibition conditional on it thwarting her interests or, alternatively, not being in conformance with her will. Personal constraints are waivable rights, and are waived (and hence not violated) when the breach of the constraint is—for interest-protecting rights—in the person’s interests, or——for choice-protecting rights—when the person has given valid (e.g., free and informed) consent.18 Thus, for example, well informed suicide and voluntary euthanasia do not violate the choice-protecting right against being killed, and non-voluntary euthanasia for a person with a life not worth living does not violate her interest-protecting right against being killed. Personal constraints—both choice-protecting and interest-protecting rights—reflect the normative separateness of persons in an appropriate manner. Like impersonal constraints, they require that the holder not be used merely a means for promoting value. Unlike impersonal constraints, by giving a special role to the interests or will of the rights-holder, they further require that the holder be treated with respect.19 There are, of course, many important questions that need to be answered. One concerns the content of the rights. For the present purposes, we don’t need to answer this question. All that matters is that there are some rights. I believe, for example, that one of our core rights is that of bodily security (e.g., against being killed, struck, or restrained). A second issue concerns whether the rights are choice-protecting or interest-protecting. The issue concerns the nature of the requisite respect that rights require. I’m inclined to think that psychologically autonomous agents have (mainly) choice-protecting rights and non-autonomous but sentient beings (such as young children and certain animals) have interest-protecting rights, but we need not resolve this issue here. All we need is the existence of some kind of right. A third issue concerns whether the rights are absolute or conditional in certain ways. Rights with thresholds, for example, have no force when the value that would be foregone is 17 above some threshold (e.g., a right against being killed might not apply where infringement is the only way of avoiding social catastrophe).20 If there are thresholds, then at some point the normative separateness of persons yields to the promotion of value. For the present purposes, we can leave this open. As long as the rights at least sometimes have some force, the normative separateness of persons will be at least partially recognized in a way incompatible with core consequentialism. The objection to core consequentialism is that it does not recognize that the ends do not always justify the means, and more specifically that the normative separateness of persons (as reflected in rights) make it impermissible to treat people in certain ways even if it promotes value.

#### [2] Naturalistic fallacy – experience only tells us what is since we can only perceive what is, not what ought to be, this means experience may be generally useful but should not be the basis for ethical action.

#### Practical Reason is that procedure. To ask for why we should be reasoners concedes its authority since it uses reason – anything else is nonbinding and arbitrary.

Velleman (David, “Self To Self”, Cambridge University Press, 2006, pg 18-19)

As we have seen, requirements that depend for their force on some external source of authority turn out to be escapable because the authority behind them can be questioned. We can ask, “Why should I act on this desire?” or “Why should I obey the U.S. Government?” or even “Why should I obey God?” And as we observed in the **case** of the desire to punch someone in the nose, this question demands a reason for acting. The authority we are questioning would be vindicated, in each case, by the production of a sufficient reason. What this observation suggests is that any purported source of practical authority depends on reasons for obeying it—and hence on the authority of reasons. Suppose, then, that we attempted to question the authority of reasons themselves, as we earlier questioned other authorities. Where we previously asked “Why should I act on my desire?” let us now ask “Why should I act for reasons?” Shouldn’t this question open up a route of escape from all requirements? As soon as we ask why we should act for reasons, however, we can hear something odd in our question. To ask “Why should I?” is to demand a reason; and so to ask “Why should I act for reasons?” is to demand a reason for acting for reasons. This demand implicitly concedes the very authority that it purports to question—namely, the authority of reasons. Why would we demand a reason if we didn’t envision acting for it? If we really didn’t feel required to act for reasons, then a reason for doing so certainly wouldn’t help. So there is something self-defeating about asking for a reason to act for reasons.

#### Reason’s authority is self-justified. Only self-justification is epistemically sound—otherwise inquiry is infinitely regressive or circular. That means the aff must prove their framework is based in a self-justifying axiom.

#### Aggregation is nonsensical since a] it impedes on one persons ends for another and b] assumes everyone values the same thing.

#### Moral law must be universal—our judgements can’t only apply to ourselves any more than 2+2=4 can be true only for me – any non-universalizable norm justifies someone’s ability to impede on your ends.

#### Thus, the standard is consistency with liberty. Prefer:

#### 1] The state is obligated to prioritize freedom.

**Otteson 09** [(James R., professor of philosophy and economics at Yeshiva University) “Kantian Individualism and Political Libertarianism,” The Independent Review, v. 13, n. 3, Winter, [2009](https://link.springer.com/article/10.1007/s10790-015-9506-9)] TDI

It is difficult to imagine a stronger defense of the “sacred” dignity of individual agency. Kantian individuality is premised on its rational nature and its entailed inherent dignity, and the rest of his moral philosophy arguably is built on this vision.1 Kant relies on a similarly robust conception of individuality in work other than his explicitly moral philosophy. The 1784 essay “An Answer to the Question: ‘What Is Enlightenment?’” (Kant 1991), for example, emphasizes in strong terms the threat that paternalism poses to one’s will. Kant argues that “enlightenment” (Aufklärung) involves a transition from moral and intellectual immaturity, wherein one depends on others to make one’s moral and intellectual decisions, to maturity, wherein one makes such decisions for oneself. One cannot effect this transition if one remains under another’s tutelage, and, as a corollary, one compromises another’s enlightenment if one undertakes to make such decisions for the other person—which, as Kant argues, is the case under a paternalistic government. Kant also writes in his 1786 essay “What Is Orientation in Thinking?” that “To think for oneself means to look within oneself (i.e. in one’s own reason) for the supreme touchstone of truth; and the maxim of thinking for oneself at all times is enlightenment” (1991, 249, italics and bold in the original). These passages are consistent with the position he takes in Grounding that a person who depends on others is acting heteronomously, not autonomously, and is to that extent not exercising a free moral will. These passages also help to clarify Kant’s notion of personhood and rational agency by indicating some of their practical implications. For example, on the basis of his argument, one would expect him to argue for setting severe limits on the authority that any group of people, including the state, may exercise over others: because individual freedom is necessary both to achieve enlightenment and to exercise one’s moral agency, Kant should argue that no group may impinge on that freedom without thereby acting immorally. Kant expressly draws this conclusion in his 1793 essay “On the Common Saying: ‘This May Be True in Theory, but It Does Not Apply in Practice’”: Right is the restriction of each individual’s freedom so that it harmonises with the freedom of everyone else (in so far as this is possible within the terms of a general law). And public right is the distinctive quality of the external laws which make this constant harmony possible. Since every restriction of freedom through the arbitrary will of another party is termed coercion, it follows that a civil constitution is a relationship among free men who are subject to coercive laws, while they retain their freedom within the general union with their fellows. (1991, 73, emphasis in original) Kant insists on the protection of a sphere of liberty for each individual to self-legislate under universalizable laws of rationality, consistent with the formulation of the categorical imperative requiring the treatment of others “always at the same time as an end and never simply as a means” (1981, 36). This formulation of the categorical imperative might even logically entail the position Kant articulates about “right,” “public right,” and “freedom.” Persons do not lose their personhood when they join a civil community, so they cannot rationally endorse a state that will be destructive of that personhood; on the contrary, according to Kant, a person enters civil society rationally willing that the society will protect both his own agency and that of others. Robert B. Pippen rightly says that for Kant “political duties are a subset of moral duties” (1985, 107–42), but the argument here puts it slightly differently: political rights, or “dignities,” derive from moral rights, which for Kant are determined by one’s moral agency. Thus, the only “coercive laws” to which individuals may rationally allow themselves to be subject in civil society are those that require respect for each others’ moral agency (and provide for the punishment of infractions thereof) (see Pippen 1985, 121). When Kant comes to state his own moral justification for the state in the 1797 Metaphysics of Morals, this claim is exactly the one he makes: the state is necessary for securing the conditions of “Right”—in other words, the conditions under which persons can exercise their autonomous agency (see 1991, 132–35). Consistent with this interpretation, Kant elsewhere endorses free trade and open markets on grounds that make his concern for “harmony” in the preceding passage reminiscent of Adam Smithian invisible-hand arguments. In his 1784 essay “Idea for a Universal History with a Cosmopolitan Purpose,” Kant writes: “Individual men and even entire nations little imagine that, while they are pursuing their own ends, each in his own way and often in opposition to others, they are unwittingly guided in their advance along a course intended by nature. They are unconsciously promoting an end which, even if they knew what it was, would scarcely arouse their interest” (1991, 41). This statement is similar to Smith’s statement of the invisible-hand argument.2 Kant proceeds to endorse some of the same laissez-faire economic policies that Smith advocated—for example, in his discussion in his 1786 work “Conjectures on the Beginning of Human History” of the benefits of “mutual exchange” and in his claim that “there can be no wealth-producing activity without freedom” (1991, 230–31, emphasis in original), as well as in his claim in the 1795 Perpetual Peace that “the spirit of commerce” is motivated by people’s “mutual self-interest” and thus “cannot exist side by side with war” (1991, 114, emphasis in original).3 Finally, although Kant argues that we cannot know exactly what direction human progress will take, he believes we can nevertheless be confident that mankind is progressing.4 Thus, in “Universal History” he writes: The highest purpose of nature—i.e. the development of all natural capacities—can be fulfilled for mankind only in society, and nature intends that man should accomplish this, and indeed all his appointed ends, by his own efforts. This purpose can be fulfilled only in a society which has not only the greatest freedom, and therefore a continual antagonism among its members, but also the most precise specification and preservation of the limits of this freedom in order that it can co-exist with the freedom of others. The highest task which nature has set for mankind must therefore be that of establishing a society in which freedom under external laws would be combined to the greatest possible extent with irresistible force, in other words of establishing a perfectly just civil constitution. (1991, 45–46, emphasis in original) Kant’s argument in this essay runs as follows: human progress is possible, but only in conditions of a civil society whose design allows this progress; because the progress is possible only as individuals become enlightened, and individual enlightenment is in turn possible only when individuals are free from improper coercion and paternalism, human progress is therefore possible only under a state that defends individual freedom. Kant believes that individuals have the best chance to be happy under a limited civil government, and he therefore argues that even such a laudable goal as increasing human happiness is not a justifiable role of the state: “But the whole concept of an external right is derived entirely from the concept of freedom in the mutual external relationships of human beings, and has nothing to do with the end which all men have by nature (i.e. the aim of achieving happiness) or with the recognized means of attaining this end. And thus the latter end must on no account interfere as a determinant with the laws governing external right” (“Theory and Practice,” 1991, 73, emphasis in original). The Kantian state is hence limited on the principled grounds of respecting agency; the fact that this limitation in his view provides the conditions enabling enlightenment, progress, and ultimately happiness is a great but ancillary benefit. Thus, the positions Kant takes on nonpolitical issues would seem to suggest a libertarian political position. And Kant explicitly avows such a state. In “Universal History,” he writes: Furthermore, civil freedom can no longer be so easily infringed without disadvantage to all trades and industries, and especially to commerce, in the event of which the state’s power in its external relations will also decline. . . . If the citizen is deterred from seeking his personal welfare in any way he chooses which is consistent with the freedom of others, the vitality of business in general and hence also the strength of the whole are held in check. For this reason, restrictions placed upon personal activities are increasingly relaxed, and general freedom of religion is granted. And thus, although folly and caprice creep in at times, enlightenment gradually arises. (1991, 50–51, emphasis in original) In “Theory and Practice,” Kant writes that “the public welfare which demands first consideration lies precisely in that legal constitution which guarantees everyone his freedom within the law, so that each remains free to seek his happiness in whatever way he thinks best, so long as he does not violate the lawful freedom and rights of his fellow subjects at large” and that “[n]o-one can compel me to be happy in accordance with his conception of the welfare of others, for each may seek his happiness in whatever way he sees fit, so long as he does not infringe upon the freedom of others to pursue a similar end which can be reconciled with the freedom of everyone else within a workable general law” (1991, 80, emphasis in original, and 74). In a crucial passage in Metaphysics of Morals, Kant writes that the “Universal Principle of Right” is “‘[e]very action which by itself or by its maxim enables the freedom of each individual’s will to co-exist with the freedom of everyone else in accordance with a universal law is right.’” He concludes, “Thus the universal law of right is as follows: let your external actions be such that the free application of your will can co-exist with the freedom of everyone in accordance with a universal law” (1991, 133, emphasis in original).5 This stipulation becomes for Kant the grounding justification for the existence of a state, its raison d’être, and the reason we leave the state of nature is to secure this sphere of maximum freedom compatible with the same freedom of all others. Because this freedom must be complete, in the sense of being as full as possible given the existence of other persons who demand similar freedom, it entails that the state may—indeed, must—secure this condition of freedom, but undertake to do nothing else because any other state activities would compromise the very autonomy the state seeks to defend. Kant’s position thus outlines and implies a political philosophy that is broadly libertarian; that is, it endorses a state constructed with the sole aim of protecting its citizens against invasions of their liberty. For Kant, individuals create a state to protect their moral agency, and in doing so they consent to coercion only insofar as it is required to prevent themselves or others from impinging on their own or others’ agency. In his argument, individuals cannot rationally consent to a state that instructs them in morals, coerces virtuous behavior, commands them to trade or not, directs their pursuit of happiness, or forcibly requires them to provide for their own or others’ pursuits of happiness. And except in cases of punishment for wrongdoing,6 this severe limitation on the scope of the state’s authority must always be respected: “The rights of man must be held sacred, however great a sacrifice the ruling power may have to make. There can be no half measures here; it is no use devising hybrid solutions such as a pragmatically conditioned right halfway between right and utility. For all politics must bend the knee before right, although politics may hope in return to arrive, however slowly, at a stage of lasting brilliance” (Perpetual Peace, 1991, 125). The implication is that a Kantian state protects against invasions of freedom and does nothing else; in the absence of invasions or threats of invasions, it is inactive.

#### 2] Enterprise – we are composed of different practical identities, but reason unifies them and allows us to shift and act upon different enterprises. Consequentialist frameworks cannot produce unified moral actions.

#### 3] Performativity—freedom is the key to the process of justification of arguments. Willing that we should abide by their ethical theory presupposes that we own ourselves in the first place.

#### Contention –

#### 1] Libertarianism mandates a market-oriented approach to space—that negates.

Broker 20 [(Tyler, work has been published in the Gonzaga Law Review, the Albany Law Review and the University of Memphis Law Review.) “Space Law Can Only Be Libertarian Minded,” Above the Law, 1-14-20, <https://abovethelaw.com/2020/01/space-law-can-only-be-libertarian-minded/>] TDI

The impact on human daily life from a transition to the virtually unlimited resource reality of space cannot be overstated. However, when it comes to the law, a minimalist, dare I say libertarian, approach appears as the only applicable system. In the words of NASA, “2020 promises to be a big year for space exploration.” Yet, as Rand Simberg points out in Reason magazine, it is actually private American investment that is currently moving space exploration to “a pace unseen since the 1960s.” According to Simberg, due to this increase in private investment “We are now on the verge of getting affordable private access to orbit for large masses of payload and people.” The impact of that type of affordable travel into space might sound sensational to some, but in reality the benefits that space can offer are far greater than any benefit currently attributed to any major policy proposal being discussed at the national level. The sheer amount of resources available within our current reach/capabilities simply speaks for itself. However, although those new realities will, as Simberg says, “bring to the fore a lot of ideological issues that up to now were just theoretical,” I believe it will also eliminate many economic and legal distinctions we currently utilize today. For example, the sheer number of resources we can already obtain in space means that in the rapidly near future, the distinction between a nonpublic good or a public good will be rendered meaningless. In other words, because the resources available within our solar system exist in such quantities, all goods will become nonrivalrous in their consumption and nonexcludable in their distribution. This would mean government engagement in the public provision of a nonpublic good, even at the trivial level, or what Kevin Williamson defines as socialism, is rendered meaningless or impossible. In fact, in space, I fail to see how any government could even try to legally compel collectivism in the way Simberg fears. Similar to many economic distinctions, however, it appears that many laws, both the good and the bad, will also be rendered meaningless as soon as we begin to utilize the resources within our solar system. For example, if every human being is given access to the resources that allows them to replicate anything anyone else has, or replace anything “taken” from them instantly, what would be the point of theft laws? If you had virtually infinite space in which you can build what we would now call luxurious livable quarters, all without exploiting human labor or fragile Earth ecosystems when you do it, what sense would most property, employment, or commercial law make? Again, this is not a pipe dream, no matter how much our population grows for the next several millennia, the amount of resources within our solar system can sustain such an existence for every human being. Rather than panicking about the future, we should try embracing it, or at least meaningfully preparing for it. Currently, the Outer Space Treaty, or as some call it “the Magna Carta of Space,” is silent on the issue of whether private individuals or corporate entities can own territory in space. Regardless of whether governments allow it, however, private citizens are currently obtaining the ability to travel there, and if human history is any indicator, private homesteading will follow, flag or no flag. We Americans know this is how a Wild West starts, where most regulation becomes the impractical pipe dream. But again, this would be a Wild West where the exploitation of human labor and fragile Earth ecosystem makes no economic sense, where every single human can be granted access to resources that even the wealthiest among us now would envy, and where innovation and imagination become the only things we would recognize as currency. Only a libertarian-type system, that guarantees basic individual rights to life, liberty, and the pursuit of happiness could be valued and therefore human fidelity to a set of laws made possible, in such an existence.

#### 2] Property rights in space can be consistent with international law

Simberg 12 [(Rand, MSE in technical management from West Coast University, recognized as an expert in space transportation by the Office of Technology Assessment) “Homesteading the Final Frontier A Practical Proposal for Securing Property Rights in Space,” Competitive Enterprise Institute, April 2012, <https://cei.org/wp-content/uploads/2012/04/Rand-Simberg-Homesteading-the-Final-Frontier.pdf>] TDI

But is it true that any recognition of off-planet property claims is de facto a violation of the Outer Space Treaty? Not necessarily. For instance, one could argue that the existence of the Moon Treaty is in and of itself a refutation of the notion that the Outer Space Treaty outlaws private property in space, or else there would be no need for another treaty that essentially explicitly does so. And there is at least one potential loophole that could be exploited by appropriately worded legislation. There are two key assumptions in the legal argument used by opponents of off-planet property claims: 1) that the recognition by a government would only recognize claims by its own citizens; and 2) that it would defend them by force. That need not necessarily be so. Under the treaty, it would in fact be possible for a government, or group of governments, to recognize the property claims of anyone who met specified conditions, regardless of their citizenship or nationality. Such cooperation would obviate the need for physical force to defend claims. The argument that the treaty permits individual property rights was actually made from the very beginning. In 1969, two years after the treaty went into force, the late distinguished space-law professor, Stephen Gorove, noted that under it, “[A]n individual acting on his own behalf or on behalf of another individual or a private association or an international organization could lawfully appropriate any part of outer space, including the [M]oon and other celestial bodies.”32 This clearly provides support for the concept of individual claims off planet under Article II.

#### 3] Space appropriation and exploration originates from private companies such as Space X and Blue Origin. Preventing such is a restriction on the ability of companies to set and pursue their ends and these companies gain contracts with the government for projects which turns promise breaking offense.

## 3

### 1NC—OFF

#### Next off is the Counterplan

#### States should:

#### - establish an international body that would license resources from outer space for private appropriation with a 20% royalty on all profits that is put into a Space Resource Fund that is used to fund space traffic management including at least active debris removal.

#### - Implement Carbon-Capture Sequestration systems

#### The CP competes and solves debris.

Saletta 16 [Morgan Saletta, PhD, History and Philosophy of Science, The University of Melbourne, and Kevin Orrman-Rossiter, Graduate Student, History & Philosophy of Science, The University of Melbourne. April 17, 2016. “All of humanity should share in the space mining boom,” <https://theconversation.com/all-of-humanity-should-share-in-the-space-mining-boom-57740>] brett

One solitary asteroid might be worth trillions of dollars in platinum and other metals. Exploiting these resources could lead to a global boom in wealth, which could raise living standards worldwide and potentially benefit all of humanity.

There are already companies, such as Planetary Resources, hoping to make mining in space a reality.

Peter Diamondis, co-founder of Planetary Resources and founder of the XPrize Grand Challenges, believes that the benefits to humanity give us a moral imperative to explore and utilise space. He has also declared “there are twenty-trillion-dollar checks up there, waiting to be cashed!”

However, behind the utopian rhetoric and dazzling dreams of riches lie some very real problems.

Ownership and the Outer Space Treaty

The framework of international space law is given by the Outer Space Treaty (OST), which entered into force in 1967. Among its main principals, the OST includes these statements:

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

and,

outer space is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means

Because the OST is generally interpreted as preventing anything like private fee-simple ownership, it is sometimes claimed to be an obstacle to commercial ventures in space. But such claims simply do not hold water.

There are numerous terrestrial examples where resources are profitably exploited in the absence of fee-simple ownership. Governments routinely licence companies to engage in timber extraction, mining, offshore oil exploration and other activities, receiving royalties payments on production.

In the United States, revenues from such royalties totalled some US$13.5 billion dollars in 2014 from federally owned or managed lands alone.

Nevertheless, some proponents of mining in outer space argue for serious modification or an end to the Outer Space Treaty and claim, against the evidence, that without fee-simple ownership, there is no incentive for commercial exploitation.

The Unites States’ Space Act of 2015 was just one volley – and a deliberately vague one at that – in this ongoing international debate.

A balanced approach?

The riches exist, but how will humanity benefit from mining in outer space, or for that matter, other global commons such as the deep sea floor?

Behind the lofty rhetoric of benefits to humanity, there is a dark shadow of voodoo economics, the shambling, walking dead figure of trickle down economics– and the possibility of a world where a few trillionaires enjoy the view from space while others barely eke a living on its surface.

Yet we do suggest that commercial interests and profit seeking can be a healthy part of the exploration of outer space. Yet outer space is not the Wild West frontier of Frederick Jackson Turner, nor do we live in the Gold Rush days of Jack London’s tale of greed and death.

In the common heritage of space, with multiple state and private actors engaging in exploration and potentially exploitation, international cooperation and oversight will benefit all.

The Alaskan model

There is a balanced, pragmatic approach that will promote commercial and profit driven activities, while also producing tangible benefits to all of humanity.

Importantly, this pragmatic approach has a well established precedent that has existed for nearly 40 years. And this comes not from a social democracy or left-wing ideology, but was the brainchild of a libertarian, Republican governor of Alaska, Jay Hammond.

That model is the Alaska Permanent Fund Corporation (APFC) created in 1976, and its unique “citizen’s dividend”. The APF is a resource wealth fund, which derives its revenue primarily from leases on oil fields.

In 1977, Hammond suggested that “rather than permitting government to spend all public monies earned through the exploitation of the public’s resources for what government thinks best, let’s grant shares to Alaskans.”

The first dividend payment was made in 1982, and in 2015 that payment amounted to US$2,072.

Linking a citizen’s dividend to a sovereign wealth fund was unique, but the idea of a citizen’s dividend has a long and venerable tradition. One of the earliest advocates was no less than the political theorist and American Revolutionary, Thomas Paine.

International body

How would this work for outer space?

We need an international body similar to the International Seabed Authority, which was established by the United Nations Convention on the Law of the Sea, or the International Telecommunications Union, which allocates satellite orbits.

This would provide the stable business and investment environment that entrepreneurs seek by ensuring international law and obligations are met. This body could license outer space resources and levy a royalty on production, which is part of standard business practice between petroleum and other mining companies and governments here on Earth.

In turn, these revenues, or a significant portion thereof, would be deposited in a Space Resource Fund, possibly under the aegis of the World Bank. And every single citizen on Earth, say aged 18 or above, would receive a dividend on a yearly basis as their rightful share as owners of the common province of humankind.

Crucially, we are not suggesting redistribution, which has been an obstacle to the International Seabed Authority and the Moon Treaty in the past, but a fair share dividend of wealth that truly belongs to everyone.

Our model doesn’t provide a handout, or a welfare cheque, or charity from a trillionaire philanthopist; it pays every owner in a global commons a share of what is rightfully theirs.

Even tiny dividends by the standards of the world’s wealthy nations would make a difference for some developing world farmers. If there truly are trillions of dollars out there, then this might be something fundamentally world changing.

We accept that Larry Page and Sir Richard Branson – founding investors and advisors in Planetary Resources – and its founders Eric Anderson and Peter Diamandis, truly want humanity to benefit from outer space, and that they truly believe in corporate social responsibility and a sustainable future. We would encourage them to embrace the idea that the sky really does belong to all of us, as the common “province of all mankind”.

By paying rent for the right to exploit resources in space and royalties on production, the same way oil companies pay to exploit oil in the Gulf of Mexico, they’ll be engaging in business as usual.

They will have bought the right to make a potentially enormous profit and prove they really are responsible global citizens. And they’d get a citizen’s dividend cheque too.

#### Solves debris.

Webb et al. 18 [Lucas; November 2018; Masters of Astronautical Engineering student at USC; Brittany Wojciechowski,\*\*; Wichita State University PhD student in aerospace engineering; Aubrey Koonce\*\*, Molly Williams\*\*\*, Wichita State University; European Space Policy Institute; “The Need for Strict Regulation of Asteroid Mining,” <https://espi.or.at/publications/voices-from-the-space-community/category/3-voices-from-the-space-community>] brett

In terms of policy recommendations, the aim is not to regulate the resources themselves but rather the activity of space mining. The Moon Agreement provides the groundwork for a stricter policy, which provides a model of how asteroid mining policies should be created and implemented. 12 Modeling new regulations based off of the Moon Agreement, we propose the creation of a mediating organization that oversees and enforces asteroid mining and its regulation. As in the Moon Agreement, this organization’s focus should be on the “orderly and safe development of natural resources… the rational management of those resources; the expansion of opportunities… [and] the equitable sharing”13 of asteroidal resources. We propose that asteroid mining firms must enter into a rental agreement with the mediating organizations. To gain access to mine space resources, Parties will be required to pay a small fee. This paid fee could then be applied towards administrative costs, but a portion could also be used to assist underdeveloped States’ space programs. In this way the mediating organization would be similar to the International Seabed Authority under the UN Convention on the Law of the Sea. 14 In order to restrict mining activity, Parties will have a duration of time (depending on extraction process of the mission) or until they meet a specific threshold of resources collected. If a Party does not exceed the threshold then they will have up until the end of the rental agreement to extract resources. By attaching this additional restriction to rented spaces, subsequent mining expeditions will have an equal opportunity to collect the same quantity or as much feasible within the contract duration. Careful documentation of the minerals acquired will be necessary and upon return to Earth, and expeditions will be subject to something akin to a space “customs”. The customs procedures will be to ensure that proper inventory was taken, and no resources are absent or mismarked. Additionally, the Party shall submit a written statement including their own inventory that was taken that contains the type, quantity, etc. of the resources in their possession. This submitted inventory would be open to everyone, allowing for free access to said information. Also, underdeveloped countries would have the ability to petition for resources through the mediating organization. However, it is up to the country/company to decide whether or not they will extend a helping hand. Perhaps an incentive and/or a reciprocal agreement of sorts could be proposed in order to foster assistance between the developed and underdeveloped Parties of the proposal. The proposal should be signed by nations that are interested themselves or have companies within them that are interested in space mining. Companies cannot sign the proposal themselves, however their governing country can sign and inform the mediating agency that they will regulate these companies and ensure they abide by the space mining regulations. Individuals or groups would be allowed to partner together, however the partnership should be outlined clearly within a contract and must be signed by all parties involved. Nations that have ratified the regulations will enforce the rules on the companies within their territory. The consequences of not following the rules of the proposal could include imprisonment and/or a large fine, like those described in Article 18 of Luxembourg’s asteroid mining policies.15 Any companies and/or individuals that do not follow the rules of the proposal should also be reported to the mediating agency along with the consequence given to them. Venturing forward into the opportunities that space provides humanity, equality and fairness should be at the forefront of new policies. While not every situation can be accounted for at the present time, by keeping these notions in mind, just systems can be formed to supply the foundation for future asteroid mining endeavors. The proposed guidelines for a treaty in which countries can come together to be a part of something larger, in the scheme of space exploration, are rough ideas, requiring shaping. However, the authors believe that this outline embodies the key ideals needed for expansion into space. 4 Conclusion For asteroid mining to become a reality collaboration with others needs to occur. Understanding the various aspects mining will include perspectives of multiple stakeholders, with all needing to keep open minds. A key component of this process will be to revise or otherwise clarify the Outer Space Treaty 16 (among other international agreements) as needed to ensure that international law is consistent with the policy recommendations outlined above. We encourage others to start thinking about what needs to be done for asteroid mining to become feasible and properly regulated. We also hope that the regulations provided will be of help in assisting in future policies. We must understand that strict regulations will be required to better ensure that asteroids will not become monopolized or depleted.

#### CCS solves warming

Herzog 16, Howard J., Senior Research Engineer in MIT Energy Initiative, July 7, “Carbon Capture is Technically Feasible, and It can be Financially Feasible” <http://www.nytimes.com/roomfordebate/2016/07/07/clean-coal-or-a-dirty-shame/carbon-caputre-is-technically-feasible-and-it-can-be-financially-feasible>. JG

Carbon dioxide capture and storage addresses a major weakness of fossil fuels by reducing their carbon dioxide emissions to near zero. It has several strengths. Unlike wind or solar, it can produce power when it’s needed. It is the most efficient form of clean energy for energy-intensive industries like cement, refineries, petrochemicals and iron and steel. It’s compatible with our fossil fuel infrastructure, which supplies over 80 percent of the commercial energy used today, and its capacity to produce negative emissions when combined with biomass-fired power plants. Carbon capture has been demonstrated successfully at about two dozen projects worldwide that each store about a million tons or more of carbon dioxide a year. Most problems with the Kemper project are due to issues not directly related to the carbon capture technology. However, in today’s marketplace, carbon capture is generally too expensive. That is because policy is not in place to set significant limits on carbon dioxide emissions. Therefore, it is cheaper to emit carbon dioxide to the atmosphere than to capture and store it. But based on many studies that were summarized in the Intergovernmental Panel on Climate Change Assessment Report 5, having more options, including carbon capture, lowers costs for meeting carbon dioxide stabilization targets. The magnitude of climate change is so large, we need as many options as possible, including renewables, nuclear, and carbon capture. But arguing that renewables can do it alone is a very risky proposition. One weakness of wind and solar is their intermittency. But proponents are now claiming energy storage can solve that problem.

#### \*\*CCS is the only option – all other approaches fail

Jacqueline Koch, Pacific Energy Forum, Can Any Tech Stop Asia’s Coal Future? April 30, 2014, thebreakthrough.org/index.php/programs/energy-and-climate/can-any-tech-stop-asias-coal-future

In principle, there are only three ways to reduce CO2 from coal-based electricity production. First, you can replace coal use with other fuels or increased energy efficiency. Second, you can increase the efficiency of coal combustion itself. The third strategy is CCS. China and India are beginning to deploy the first two strategies, but not fast enough to change the story dramatically in the next few decades. Japan, as noted, with its nuclear plant closures, is going backwards on reducing CO2 emissions by deploying more coal and gas. That elevates the importance of CCS. And, as noted before, CCS is really the only strategy available for coal use for certain processes in heavy industry. Energy efficiency is important—but, given the surge in first-time demand resulting from urbanization and increased wealth, improvements in efficiency are not expected to significantly dent absolute demand growth. Indeed, substantial efficiency improvements are already “baked in” to the high-growth scenarios for Asia; growth would be even higher if efficiency lagged. Improving the efficiency of coal plants is useful, but will only reduce CO2 emissions at the margin. Then there are renewables. Each year brings news and discussions regarding the dramatic percent increase in additions of wind and solar power in China, but this is from a very small base. In 2011, China derived 78 percent of its power from coal, and less than 2 percent from wind and solar. In 2013, China added in excess of three times more new coal electricity in kilowatt hours (kWh) than wind and solar combined. While China is building 28 new nuclear plants and aims to have up to 150 on line within two decades, this would still only produce a fraction of the power produced from coal. A recent Bloomberg study predicted that China coal use might peak as percentage of total power supply in the coming decades, but until then (and even after, according to the U.S. Department of Energy) would continue to grow in absolute amounts and still provide well over half of China’s electricity in 2030, even in the best-case scenario. Moreover, this scenario will not be significantly affected by the recent coal plant construction ban in parts of coastal China; substantial development is proposed in the western and northern provinces. Due to the long life of coal plants—lasting 50 years or more—and given that China’s plants are mostly less than a decade old, the current and soon-to-be-built plants will continue to retard climate progress for another half-century if nothing is done to address their CO2 emissions. However, there are potential game-changers. They include modular, less expensive nuclear plants that could step in to replace coal boilers on an economical retrofit basis, or the “reforming” of natural gas, which removes the carbon and produces hydrogen to make price-competitive carbon-free liquid fuels like ammonia. My organization is working hard with developers to commercialize this technology. But CCS on coal-fired power plants seems like the most likely and necessary option in the near term.

## Case

### 1NC—FW

#### Util is not morally guiding 1. Naturalistic fallacy – it needs another framework to define “good” – as theirs collapses to pleasure is good because good is pleasure 2. Aggregation is impossible A. Relies on non-falsifiable intuitions—takes out Bowden B. Assumes pain can be defined univocally, which is circumvented by artificial, sadistic desires and the pleasure machine.

**Grisez 98** Germain Gabriel Grisez was a French-American philosopher. Grisez's development of ideas from Thomas Aquinas has redirected Catholic thought and changed the way it has engaged with secular moral philosophy.[“Against Consequentialism” [https://watermark.silverchair.com/ajj-23-21.pdf?token=AQECAHi208BE49Ooan9kkhW\_Ercy7Dm3ZL\_9Cf3qfKAc485ysgAAAp0wggKZBgkqhkiG9w0BBwagggKKMIIChgIBADCCAn8GCSqGSIb3DQEHATAeBglghkgBZQMEAS4wEQQM31I2JRwpIDRMtBt4AgEQgIICUPGnXFsM-WpZTMmjsvPLgy3q8l5rnkIxDz81T0kEBIIzW5Nl3pF8mNA43HdB9X\_X38CzovhZPn5cahx2BsTf9yMoI3YXXP2w0YAzTL1vLtZ86q-GyT8dkvPxR4jZtfjuqM6z\_DJkDfjWAbcJi1ElcDBv3t\_VUqIXkXL5TLX\_VtR5738SYkQ--sdWQTG2VtWgtGXkHg6lXoxgosAyI\_eoOroAakJcUGfQc-fORn8mmJcLd3pe0MJAtLD9eEZs1-cqSQM8g4LUPB94U2pMM9fB8G6fvVrgJS60x8lF\_tMcdD3CFq\_2A1SKcb68PD8Fdihp9r60W-NBbxOkUw22CTS3BZWyEAt63QxKQTi931W3O4BJ-tLiRwXtohTj-osNXkPSSKFuzMzRxQdcfgeWzLrwOhezKs7j8kPd4JyHdgEwC\_CdZhbK22TKsMAfKBqxCwU2wA\_lbtm7K0g9jCIpV6JZgXL3zNZ0He4elP3cFwj5noKSz6SMlCpOGvwe3UOvT5LXL\_punPbCC-F-66WIZG5qCyjY3kzSLITP9ocRgBYIYKgRmyd5fXO16k1GkvVwFVWf4pehQVUpmi637gCzxtmSdIbSa\_EI3Q1Qnev-tQI7-I4MUpNBUa20umMsNrDOMJsgzWHZXFapm93GHP92FTrs5N-2TCe3h7dszGU\_0DikR1HPKA3jHVbXQgK2wLATRIu0ajpT05qSl57rbOdeC\_bZJ00udDxm35tfPYEb\_5P6VlZVFqnB5cYR60rCIVbHJ2IU1RW17YfF1-cqbac-X-lNYXI](https://watermark.silverchair.com/ajj-23-21.pdf?token=AQECAHi208BE49Ooan9kkhW_Ercy7Dm3ZL_9Cf3qfKAc485ysgAAAp0wggKZBgkqhkiG9w0BBwagggKKMIIChgIBADCCAn8GCSqGSIb3DQEHATAeBglghkgBZQMEAS4wEQQM31I2JRwpIDRMtBt4AgEQgIICUPGnXFsM-WpZTMmjsvPLgy3q8l5rnkIxDz81T0kEBIIzW5) 1978]//Mberhe

In an extensive survey of work in utilitarianism from 1961-1971, Dan W. Brock points out that utilitarianism requires that utility be calculable. After suggesting that there are obvious difficulties in making such measurements, Brock adds: More important and perplexing, however, is how the necessary calculations can, even in principle, be made and whether the logical foundations necessary to the intelligibility of these calculations exist. Moral philosophers have paid surprisingly little attention to these two problems. Most discussions of utilitarianism in recent books and journals simply assume that it is possible to determine in any situation what is required by utility-maximization, and then go on to consider whether this always coincides with what is required by morality.7 Brock's remarks might be discounted as the view of an unsympathetic student of utilitarianism. But this would be a mistake. J. J. C. Smart, a leading proponent of unrestricted, direct utilitarianism, admitted in an article published in 1967 that because of obstacles to calculation . . . the utilitarian is reduced to an intuitive weighing of various consequences with their probabilities. It is impossible to justify such intuitions rationally, and we have here a serious weakness in utilitarianism.8 Similarly, A. J. Ayer, who defends a form of consequentialism with respect to the formation of social policies, criticizes Bentham's attempt to apply consequentialism to the moral judgment of individuals. Ayer concludes: In virtue of what standard of measurement can I set about adding the satisfaction of one person to that of another and subtracting the resultant quantity from the dissatisfaction of someone else? Clearly there is no such standard, and Bentham's process of "sober calculation" turns out to be a myth.9 It also is worth noticing that Bentham himself recognized difficulties in an area related to that considered by Ayer, for in an unpublished note Bentham wrote that the . . . addibility of the happiness of different subjects, however when considered rigorously it may appear fictitious, is a postulation without the allowance of which all political reasonings are at a stand: nor is it more fictitious than that of the equality of chances to reality on which the whole branch of the Mathematics which is called the doctrine of chance is established.10 In other words, Bentham regards the postulation of commensurability as one necessary for practical purposes. He justifies the interpersonal comparisons challenged by the objection he is considering by saying that when there is no reason to consider incommensurable goods more or less than one another, it is quite rational to consider them equal. Bentham's position is unassailable, provided that "equal" can be used meaningfully in this context. This I deny. If "greater good" is to be meaningful in the formulation of a criterion of morality, three conditions must be fulfilled: 1) "good" must have a single meaning; 2) what is good in this unique sense must be measurable; and 3) the result of measurement must settle moral issues either directly or indirectly. Clearly, the necessary meaning of "good" cannot be specified in moral terms. What Rawls says of utilitarianism is true of all consequentialism: Its point is to define "good" independently of "right" and to define "right" in terms of "good." And, in general, consequentialists see this requirement and try to meet it.11 If consequentialists said that ethical considerations determine what a good consequence is, they would either be going in a circle or setting off on an infinite regress. If the single meaning of "good" which consequentialism needs cannot be specified by moral principles, how can it be specified? If human persons have a single, well-defined goal or function, set for them by nature or by God, then "good" has the necessary, univocal meaning. Acts are right or wrong insofar as they do or do not bring one to this goal or fulfill this function. On one interpretation, Aristotle's ethics are of this sort. But Aristotle's ethics, understood thus, have been challenged. Most modern philosophers deny that humankind has a definite goal or function. In this dispute, the moderns seem to be in the right. If persons are ends in themselves, they cannot be ordered to a good as any part to a whole or any means to an end. Aristotle either subordinates the lives of the many to the actualization of a few, or he admits the intrinsic value of lives other than the contemplative. If the latter, "good" lacks the univocal meaning consequentialism needs.12 Many Christians have thought of personal salvation as a single, well-defined goal. Consequentialist thinking based on this conception of the good led to the abuses for which modern humanists condemn Christianity: excessive otherworldliness, religious fanaticism, inhuman asceticism, and so on. Of course, these abuses are not entailed by the view that personal salvation is a single, well-defined goal. But this view does entail that the goodness of a Christian's acts is specified by their efficiency as means of getting to heaven. Those who accept this moral theory face a dilemma. If they consider human acts in and of themselves to be effective means of salvation, they are pelagians. If they consider human acts to be effective means of salvation by divine fiat, they are voluntarists. The latter position implies that this life is inherently meaningless, but is meaningful as a time of temptation. This concept respects divine power, but ignores divine wisdom.13 Anyone who holds that all human persons have a single goal which defines "good" univocally also confronts facts one cannot easily explain. People who seem equally able, intelligent, and healthy have different goals in life. If one says that all humans have the same goal, one will find almost everyone else disagreeing as soon as the goal is specified. Even those Christians, who in theory take an otherworldly and voluntaristic position, in practice treat an incommensurable variety of goods as determinative of the moral goodness of human acts, for they admit the legitimacy of a variety of Christian life styles and they try to show the immorality of various kinds of acts, not only by their incongruity with holiness and grace, but also by their incompatibility with goods immanent in human persons — goods such as life, truth, justice, love, and peace. Shortly after World War II, a British economist, Lionel Robbins, reflected upon the simplifications introduced into the making of socioeconomic policy during wartime. A single objective counts; all else is instrumental. If there is no victory, there is no future. All decisions are technical. Unity of purpose "gives a certain unity to the framework of planning which at least makes possible some sort of direct decision which is not wholly arbitrary. "1A Robbins is correct about the wartime psychology of Britain and the United States. The unconditional surrender of the enemy became a fixation with the leaders and people of both nations. This fixation partly explains the adoption of ethically questionable tactics, such as obliteration bombing. It also helps to explain why Soviet leaders, who took a longer view, were more prudent than Anglo-American leaders in gaining post-war advantages before the war ended. Most philosophical consequentialists have been liberals. Instead of saying that all humans have the same goal, they have tried to define "good" univocally, to leave room for differing concrete goals, but to make them commensurable with one another. Many utilitarians, following Bentham, define "good" in terms of happiness. Others define "good" in terms of the maximum satisfaction of desires, less the minimum of unavoidable frustration. Since different people have different enjoyments and desires, either approach allows for differing goals. To ensure commensurability, those who take either approach must deny that any sort of pleasure or desire differs from any other sort in a way which would make their inherent goodness differ. Desire theorists, for example, often say that all human desires have the same initial claim to satisfaction. If happiness is used to define "good" univocally, "happiness" itself must be used univocally. If it is, the theory becomes implausible.15 For example, if happiness is taken to be a certain quality of consciousness, how can one explain certain people's dedication to causes which are irreducible to states of consciousness. For them, happiness is participation in something bigger than themselves. A consequentialist can use "happiness" in a very wide sense to allow for the diverse life styles people regard as intrinsically good. But if this maneuver makes it plausible to say that everyone desires happiness, "happiness" ceases to be univocal and thus becomes useless for the consequentialist. People not only get happiness by different means, but "happiness" as an end is different things to different people. Attempts to define "good" univocally in terms of satisfaction of desire also fail. Do all human desires really have the same initial claim to satisfaction? Some people desire sadistic pleasure. Many people desire death for criminals. Pornography sells better than the best literature; more people desire the former than the latter. Some people desire feminine deodorant spray. It sells. Most people have what some economists call "artificial desires." Keynes, for instance, distinguishes the needs people have of themselves from the needs they have in ofar as they wish to get ahead of others. Galbraith talks of wants created by production and advertising. He points out that the desire for increased expenditure may be stronger than any need which can be satisfied by it.16 Are all these desires to be counted uncritically in calculating moral right and wrong? A desire theorist can answer that desires must be criticized. If someone desires what is logically impossible, his desire should be ignored. If someone has a desire which would go away if her false belief about matters of fact were corrected, the error ought to be corrected. But these criteria do not dispose of all the examples mentioned in the previous paragraph. The desires of sadists, of proponents of capital punishment, of dirty old men, and of status seekers are not for anything logically impossible. Nor is it always the case that such desires arise from errors about matters of fact. The desire theorist must find additional principles of criticism. Since moral criteria cannot be invoked without circularity or infinite regress, the desire theorist might seek a scientific criterion from psychology. Clearly, the desires of the ~~insane~~ do not have the same initial claim to satisfaction as do the desires of the mentally healthy. Sadists, proponents of capital punishment, dirty old men, and status seekers need not be insane, but perhaps they are not mentally healthy. Therefore, let mental healthfulness of desires be the criterion. But there are just as many schools of psychology as there are philosophical and religious conceptions of the good life. Psychologists are not proceeding as scientists when they go beyond the consensus about insanity to give a full account of "mental health." Opinions about the good life do not become science simply because they happen to be the opinions of Freud, Jung, Adler, Allers, Horney, Maslow, Allport, Erikson, Fromm, Menninger, or some other person of scientific competence. If the opinions of such persons about the good life were science, they would offer a common, detailed account of "mental health." They do not. Attempts to define "good" either in terms of happiness or desire also must fit in pain and frustration. If the disvalues are the same in kind as the values, merely negative in degree, the value and its opposite can be measured on a single scale as one measures heat and cold with the same thermometer. But this assumption has been questioned.17 It is not at all obvious that a disvalue is simply a low level of a value, as cold is lack of heat. Disvalues such as pain and frustration are not mere privations; they have a positive character of their own. Thus, "good" is not univocal if it is defined either in terms of happiness and avoidance of pain, or in terms of satisfaction and frustration of desire. The calculation of the "greater good" is blocked by the incommensurability of the opposites in either pair. Another difficulty with these theories of value is that enjoyments and desires differ in kind, not only in degree. As I said above, "happiness" means different things to different people. One can compare the enjoyment of drinking a Coke with that of eating a candy bar or the desire for the one with that for the other.18 But how many appetizing meals in a French restaurant give enjoyment comparable to that of a happy marriage? How many satisfactions of desires for particular objectives are comparable to the satisfaction of one's desire to be a good father, an excellent philosopher, or a faithful follower of Jesus? Jeremy Bentham, who took calculation seriously, dealt with the problem of commensurability in a characteristically straightforward way: Money is the instrument for measuring the quantity of pain or pleasure. Those who are not satisfied with the accuracy of this instrument must find out some other that shall be more accurate, or bid adieu to Politics and Morals. Let no man therefore be either surprised or scandalized if he find me in the course of this work valuing every thing in money. Tis in this way only we can get aliquot parts to measure by. If we must not say of a pain or a pleasure that it is worth so much money, it is in vain, in point of quantity, to say anything at all about it, there is neither proportion nor disproportion between Punishments and Crimes.19 Since one must calculate, one can. So "good" is reduced to pleasure and avoidance of pain, and these are reduced to money. Bentham's leap-of-faith is breathtaking.20 He is no cynic saying that every person has his or her price. He is a moralist saying that the best things in life simply cost more than a Coke or a candy bar. The definition of "good" in terms of enjoyment faces another objection. Enjoyment is a conscious experience which normally arises but is distinct from some activity which extends beyond consciousness. Let us imagine a device which could record total experiences as they were being lived and then play them back in the brains of other persons. One might enjoy receiving such a recorded experience—for example, of one's favorite athlete winning one's favorite game. But would one wish to spend the rest of one's life receiving such recorded experiences, however enjoyable they might be? This thought-experiment isolates enjoyment as a conscious experience from the whole of real life which one enjoys. If one agrees that one would not wish to spend the rest of one's life receiving recorded enjoyable experiences, one can still value enjoyment, but only insofar as it is part of a real life in which goods transcending consciousness also are participated.21 Those who define "good" in terms of desire can point out that the preceding argument does not touch them. "Satisfaction" is said of whole persons interacting with their total environment. Moreover, while "desire" often is used in a wider sense than "enjoyment," it also is used in a more precise sense than "happiness." . But even if desire theorists can solve other difficulties, they still must admit incommensurable kinds of desires if they are to avoid something like Bentham's postulate that the best things in life merely cost more. If desire theorists admit incommensurable kinds of desires, then in the present matter I have no quarrel with them. The goods remain incommensurable, and consequentialist calculation is blocked.

#### Aggregative consequentialism is incoherent since impact to human extinction or anything imaginable is finite and can’t alter the infinite sum.

Bostrom 2008 Nick is a Professor at University of Oxford, PhD from London School of Economics. [“The Infinitarian Challenge to Aggregative Ethics”. <http://www.nickbostrom.com/ethics/infinite.pdf> 2008]//Mberhe \* bracketed for ableist language

ABSTRACT Aggregative consequentialism and several other popular moral theories are threatened ~~with paralysis:~~ when coupled with some plausible assumptions, they seem to imply that it is always ethically indifferent what you do. Modern cosmology teaches that the world might well contain an infinite number of happy and sad people and other candidate value-bearing locations. Aggregative ethics implies that such a world contains an infinite amount of positive value and an infinite amount of negative value. You can affect only a finite amount of good or bad. In standard cardinal arithmetic, an infinite quantity is unchanged by the addition or subtraction of any finite quantity. So it appears you cannot change the value of the world. Modifications of aggregationism aimed at resolving the paralysis are only partially effective and cause severe side effects, including problems of “fanaticism”, “distortion”, and erosion of the intuitions that originally motivated the theory. Is the infinitarian challenge fatal? 1. The challenge 1.1. The threat of infinitarian paralysis When we gaze at the starry sky at night and try to think of humanity from a “cosmic point of view”, we feel small. Human history, with all its earnest strivings, triumphs, and tragedies can remind us of a colony of ants, laboring frantically to rearrange the needles of their little ephemeral stack. We brush such late-night rumination aside in our daily life and analytic 2 philosophy. But, might such seemingly idle reflections hint at something of philosophical significance? In particular, might they contain an important implication for our moral theorizing? If the cosmos is finite, then our own comparative smallness does not necessarily undermine the idea that our conduct matters even from an impersonal perspective. We might constitute a minute portion of the whole, but that does not detract from our absolute importance. Suppose there are a hundred thousand other planets with civilizations that had their own holocausts. This does not alter the fact that the holocaust that humans caused contributed an enormous quantity of suffering to the world, a quantity measured in millions of destroyed lives. Maybe this is a tiny fraction of the total suffering in the world, but in absolute terms it is unfathomably large. Aggregative ethics can thus be reconciled with the finite case if we note that, when sizing up the moral significance of our acts, the relevant consideration is not how big a part they constitute of the whole of the doings and goings-on in the universe, but rather what difference they make in absolute terms. The infinite case is fundamentally different. Suppose the world contains an infinite number of people and a corresponding infinity of joys and sorrows, preference satisfactions and frustrations, instances of virtue and depravation, and other such local phenomena at least some of which have positive or negative value. More precisely, suppose that there is some finite value ε such that there exists an infinite number of local phenomena (this could be a subset of e.g. persons, experiences, characters, virtuous acts, lives, relationships, civilizations, or ecosystems) each of which has a value ≥ ε and also an infinite number of local phenomena each of which has a value ≤ (‒ ε). Call such a world canonically infinite. Ethical theories that hold that value is aggregative imply that a canonically infinite world contains an infinite quantity of positive value and an infinite quantity of negative value. This gives rise to a peculiar predicament. We can do only a finite amount of good or bad. Yet in cardinal arithmetic, adding or subtracting a finite quantity does not change an infinite quantity. Every possible act of ours therefore has the same net effect on the total amount of good and bad in a canonically infinite world: none whatsoever. Aggregative consequentialist theories are threatened by infinitarian paralysis: they seem to imply that if the world is canonically infinite then it is always ethically indifferent what we do. In particular, they would imply that it is ethically indifferent whether we cause another holocaust or prevent one from occurring. If any non-contradictory normative implication is a reductio ad absurdum, this one is. Is the world canonically infinite or not? Recent cosmological evidence suggests that the world is probably infinite.1 Moreover, if the totality of physical existence is indeed infinite, in the kind of way that modern cosmology suggests it is, then it contains an infinite 3 number of galaxies, stars, and planets. If there are an infinite number of planets then there is, with probability one, an infinite number of people.2 Infinitely many of these people are happy, infinitely many are unhappy. Likewise for other local properties that are plausible candidates for having value, pertaining to person-states, lives, or entire societies, ecosystems, or civilizations—there are infinitely many democratic states, and infinitely many that are ruled by despots, etc. It therefore appears likely that the actual world is canonically infinite. We do not know for sure that we live in a canonically infinite world. Contemporary cosmology is in considerable flux, so its conclusions should be regarded as tentative. But it is definitely not reasonable, in light of the evidence we currently possess, to assume that we do not live in a canonically infinite world. And that is sufficient for the predicament to arise. Any ethical theory that fails to cope with this likely empirical contingency must be rejected. We should not accept an ethical theory which, conditional on our current best scientific guesses about the size and nature of the cosmos, implies that it is ethically indifferent whether we cause or prevent another holocaust.3 1.2. Which theories are threatened? Infinitarian paralysis threatens a wide range of popular ethical theories. Consider, to begin with, hedonistic utilitarianism, which in its classical formulation states that you ought to do that which maximizes the total amount of pleasure and minimizes the total amount of pain in the world. If pleasure and pain are already infinite, then all possible actions you could take would be morally on a par according to this criterion, for none of them would make any difference to the total amount of pleasure or pain. Endorsing this form of utilitarianism commits one to the view that, conditional on the world being canonically infinite, ending world hunger and causing a famine are ethically equivalent options. It is not the case that you ought to do one rather than the other. The threat is not limited to hedonistic utilitarianism. Utilitarian theories that have a broader conception of the good—happiness, preference-satisfaction, virtue, beautyappreciation, or some objective list of ingredients that make for a good life—face the same problem. So, too, does average utilitarianism, mixed total/average utilitarianism, and prioritarian views that place a premium on the well-being of the worst off. In a canonically infinite world, average utility and most weighted utility measures are just as imperturbable by human agency as is the simple sum of utility. Many non-utilitarian ethical theories are also imperiled. One common view is that in determining what we ought to do we should take into account the difference our acts would make to the total amount of well-being experienced by sentient persons even though we 4 must also factor in the special obligations that we have to particular individuals (and perhaps various deontological side-constraints). If our actions never make any difference to the amount of well-being in the world, the maximizing component of such hybrid theories becomes defunct. Depending on the structure of the theory, the components that remain in operation may—or may not—continue to generate sensible moral guidance. Moorean views, which claim that value resides in “organic unities”, are also vulnerable. If the relevant unities supervene on some medium-sized spacetime regions, such as societies or planets, then there might well be infinitely many such unities. If, instead, the relevant unity is the universe itself, then it is unclear that we could change its total value by modifying the infinitesimal part of it that is within our reach.4 For simplicity, we will focus most of the discussion on purely consequentialist theories (even though, as we have seen, the problems affect a much larger family of ethical systems). However, not all consequentialist theories are threatened. The vulnerability infinitarian paralysis arises from the combination of two elements: consequentialism and aggregationism. By “aggregationism” we refer to the idea that the value of a world is (something like) the sum or aggregate of the values of its parts, where these parts are some kind of local phenomena such as experiences, lives, or societies. By consequentialism we refer to the idea that the rightness or wrongness of an action is (somehow) determined on the basis of considerations about whether its consequences increase or decrease value. We shall later explore how various more precise explications of “aggregationism” and “consequentialism” fare in relation to the threat of infinitarian paralysis and associated challenges. The challenge addressed in this paper is related to—but also crucially different from—Pascal’s wager, the St. Petersburg paradox, the Pasadena problem, the Heaven and Hell problem, and kindred prudential “infinite” decision problems. 5 Related, because in each case there is, purportedly, the prospect of infinite values to be reckoned with. Different, because one important escape route that is available in the prudential cases is blocked in the ethical case. This is the route of denying that infinite values are really at stake. One way of responding to Pascal’s wager, for instance, is by taking it to show that we do not in fact have an infinitely strong preference for spending an eternity in Heaven. The attractiveness of this response would be enhanced by the finding that the alternative is to accept highly counterintuitive consequences. In a revealed-preference paradigm, this is anyway a perfectly natural view. If we accept a theory of rationality that grounds what we have reason to do in our preferences (whether raw or idealized) then we have a simple and plausible answer to Pascal: Yes, if one had an infinitely strong preference for eternal life in Heaven, then it would be rational to forego any finite pleasure on Earth for any ever-so- 5 slight increase in the odds of salvation (at least if one assumes that there would be no chance of obtaining an infinite good if one did not accept the wager, and no chance that accepting it might backfire and result in an infinite bad). However, if one does not have an infinitely strong preference for Heaven, then Pascal’s argument does not show that one is irrational to decline the wager. The fact that most people would on reflection reject the wager would simply show that most people do not place an infinite value on Heaven. The analogous response is not available to the ethical aggregationist, who is committed to the view that the total value of a world is the aggregate of the value of its parts, for this entails placing an infinite value on certain kinds of world. If a world has an infinite number of locations, and there is some finite value v such that an infinite number of the locations have an ethical value greater than v, then that world has an infinite ethical value. This is a core commitment of aggregationism; giving it up means giving up aggregationism. So the possibility of an infinite world presents a graver problem for aggregative ethics than it does for prudential rationality

### 1NC—Case

#### NUQ-their ev indicates any space activity contributes

#### Tracking debris exists now and solves collisions.

**Mosher** **’19** [Dave; September 3rd; Journalist with more than a decade of experience reporting and writing stories about space, science, and technology; Business Insider, “Satellite collisions may trigger a space-junk disaster that could end human access to orbit. Here’s How,” <https://www.usafa.edu/app/uploads/Space_and_Defense_2_3.pdf>; GR]

The Kessler syndrome plays center-stage in the movie "Gravity," in which an accidental space collision endangers a crew aboard a large space station. But Gossner said that type of a runaway space-junk catastrophe is unlikely. "Right now I don't think we're close to that," he said. "I'm not saying we couldn't get there, and I'm not saying we don't need to be smart and manage the problem. But I don't see it ever becoming, anytime soon, an unmanageable problem." There is no current system to remove old satellites or sweep up bits of debris in order to prevent a Kessler event. Instead, space debris is monitored from Earth, and new rules require satellites in low-Earth orbit be deorbited after 25 years so they don't wind up adding more space junk. "Our current plan is to manage the problem and not let it get that far," Gossner said. "I don't think that we're even close to needing to actively remove stuff. There's lots of research being done on that, and maybe some day that will happen, but I think that — at this point, and in my humble opinion — an unnecessary expense." A major part of the effort to prevent a Kessler event is the Space Surveillance Network (SSN). The project, led by the US military, uses 30 different systems around the world to identify, track, and share information about objects in space. Many objects are tracked day and night via a networkof radar observatories around the globe. Optical telescopes on the ground also keep an eye out, but they aren't always run by the government. "The commercial sector is actually putting up lots and lots of telescopes," Gossner said. The government pays for their debris-tracking services. Gossner said one major debris-tracking company is called Exoanalytic. It uses about 150 small telescopes set up around the globe to detect, track, and report space debris to the SSN. Telescopes in space track debris, too. Far less is known about them because they're likely top-secret military satellites. Objects detected by the government and companies get added to a catalog of space debris and checked against the orbits of other known bits of space junk. New orbits are calculated with supercomputers to see if there's a chance of any collisions. Diana McKissock, a flight lead with the US Air Force's 18th Space Control Squadron, helps track space debris for the SSN. She said the surveillance network issues warnings to NASA, satellite companies, and other groups with spacecraft, based on two levels of emergency: basic and advanced. The SSN issues a basic emergency report to the public three days ahead of a 1-in-10,000 chance of a collision. It then provides multiple updates per day until the risk of a collision passes. To qualify for such reporting, a rogue object must come within a certain distance of another object. In low-Earth orbit, that distance must be less than 1 kilometer (0.62 mile); farther out in deep space, where the precision of orbits is less reliable, the distance is less than 5 kilometers (3.1 miles). Advanced emergency reports help satellite providers see possible collisions much more than three days ahead. "In 2017, we provided data for 308,984 events, of which only 655 were emergency-reportable," McKissock told Business Insider in an email. Of those, 579 events were in low-Earth orbit (where it's relatively crowded with satellites).

#### Only solving emissions at their source solves -- asteroid mining does that best:

#### Commercial mining solves adaptation better

Pelton 17—(Director Emeritus of the Space and Advanced Communications Research Institute at George Washington University, PHD in IR from Georgetown). Pelton, Joseph N. 2017. The New Gold Rush: The Riches of Space Beckon! Springer. Accessed 8/30/19.

Are We Humans Doomed to Extinction? What will we do when Earth’s resources are used up by humanity? The world is now hugely over populated, with billions and billions crammed into our overcrowded cities. By 2050, we may be 9 billion strong, and by 2100 well over 11 billion people on Planet Earth. Some at the United Nations say we might even be an amazing 12 billion crawling around this small globe. And over 80 % of us will be living in congested cities. These cities will be ever more vulnerable to terrorist attack, natural disaster, and other plights that come with overcrowding and a dearth of jobs that will be fueled by rapid automation and the rise of artifi cial intelligence across the global economy. We are already rapidly running out of water and minerals. Climate change is threatening our very existence. Political leaders and even the Pope have cautioned us against inaction. Perhaps the naysayers are right. All humanity is at tremendous risk. Is there no hope for the future? This book is about hope. We think that there is literally heavenly hope for humanity. But we are not talking here about divine intervention. We are envisioning a new space economy that recognizes that there is more water in the skies that all our oceans. Th ere is a new wealth of natural resources and clean energy in the reaches of outer space—more than most of us could ever dream possible. There are those that say why waste money on outer space when we have severe problems here at home? Going into space is not a waste of money. It is our future. It is our hope for new jobs and resources. The great challenge of our times is to reverse public thinking to see space not as a resource drain but as the doorway to opportunity. The new space frontier can literally open up a “gold rush in the skies.” In brief, we think there is new hope for humanity. We see a new a pathway to the future via new ventures in space. For too long, space programs have been seen as a money pit. In the process, we have overlooked the great abundance available to us in the skies above. It is important to recognize there is already the beginning of a new gold rush in space—a pathway to astral abundance. “New Space” is a term increasingly used to describe radical new commercial space initiatives—many of which have come from Silicon Valley and often with backing from the group of entrepreneurs known popularly as the “space billionaires.” New space is revolutionizing the space industry with lower cost space transportation and space systems that represent significant cost savings and new technological breakthroughs. “New Commercial Space” and the “New Space Economy” represent more than a new way of looking at outer space. These new pathways to the stars could prove vital to human survival. If one does not believe in spending money to probe the mysteries of the universe then perhaps we can try what might be called “calibrated greed” on for size. One only needs to go to a cubesat workshop, or to Silicon Valley or one of many conferences like the “Disrupt Space” event in Bremen, Germany, held in April 2016 to recognize that entrepreneurial New Space initiatives are changing everything [ 1 ]. In fact, the very nature and dimensions of what outer space activities are today have changed forever. It is no longer your grandfather’s concept of outer space that was once dominated by the big national space agencies. The entrepreneurs are taking over. The hopeful statements in this book and the hard economic and technical data that backs them up are more than a minority opinion. It is a topic of growing interest at the World Economic Forum, where business and political heavyweights meet in Davos, Switzerland, to discuss how to stimulate new patterns of global economic growth. It is even the growing view of a group that call themselves “space ethicists.” Here is how Christopher J. Newman, at the University of Sunderland in the United Kingdom has put it: Space ethicists have offered the view that space exploration is not only desirable; it is a duty that we, as a species, must undertake in order to secure the survival of humanity over the longer term. Expanding both the resource base and, eventually, the habitats available for humanity means that any expenditure on space exploration, far from being viewed as frivolous, can legitimately be rationalized as an ethical investment choice. (Newman) On the other hand there are space ethicists and space exobiologists who argue that humans have created ecological ruin on the planet—and now space debris is starting to pollute space. Th ese countervailing thoughts by the “no growth” camp of space ethicists say we have no right to colonize other planets or to mine the Moon and asteroids—or at least no right to do so until we can prove we can sustain life here on Earth for the longer term. However, for most who are planning for the new space economy the opinion of space philosophers doesn’t really fl oat their boat. Legislators, bankers, and aspiring space entrepreneurs are far more interested in the views of the super-rich capitalists called the space billionaires. A number of these billionaires and space executives have already put some very serious money into enterprises intent on creating a new pathway to the stars. No less than five billionaires with established space ventures—Elon Musk, Paul Allen, Jeff Bezos, Sir Richard Branson, and Robert Bigelow—have invested millions if not billions of dollars into commercializing space. They are developing new technologies and establishing space enterprises that can bring the wealth of outer space down to Earth. This is not a pipe dream, but will increasingly be the economic reality of the 2020s. These wealthy space entrepreneurs see major new economic opportunities. To them space represents the last great frontier for enterprising pioneers. Th us they see an ever-expanding space frontier that offers opportunities in low-cost space transportation, satellite solar power satellites to produce clean energy 24h a day, space mining, space manufacturing and production, and eventually space habitats and colonies as a trajectory to a better human future. Some even more visionary thinkers envision the possibility of terraforming Mars, or creating new structures in space to protect our planet from cosmic hazards and even raising Earth’s orbit to escape the rising heat levels of the Sun in millennia to come. Some, of course, will say this is sci-fi hogwash. It can’t be done. We say that this is what people would have said in 1900 about airplanes, rocket ships, cell phones and nuclear devices. The skeptics laughed at Columbus and his plan to sail across the oceans to discover new worlds. When Thomas Jefferson bought the Louisiana Purchase from France or Seward bought Alaska, there were plenty of naysayers that said such investment in the unknown was an extravagant waste of money. A healthy skepticism is useful and can play a role in economic and business success. Before one dismisses the idea of an impending major new space economy and a new gold rush, it might useful to see what has already transpired in space development in just the past five decades. The world’s first geosynchronous communications satellite had a throughput capability of about 500 kb / s. In contrast, today’s state of the art Viasat 2 —a half century later— has an impressive throughput of some 140 Gb/s. Th is means that the relative throughput is nearly 300,000 greater, while its lifetime is some ten times longer (Figs. 1.1 and 1.2 ). Each new generation of communications satellite has had more power, better antenna systems, improved pointing and stabilization, and an extended lifetime. And the capabilities represented by remote sensing satellites , meteorological satellites , and navigation and timing satellites have also expanded their capabilities and performance in an impressive manner. When satellite applications first started, the market was measured in millions of dollars. Today commercial satellite services exceed a quarter of a billion dollars. Vital services such as the Internet, aircraft traffi c control and management, international banking, search and rescue and much, much more depend on application satellites. Th ose that would doubt the importance of satellites to the global economy might wish to view on You Tube the video “If Th ere Were a Day Without Satellites?” [ 2 ]. Let’s check in on what some of those very rich and smart guys think about the new space economy and its potential. (We are sorry to say that so far there are no female space billionaires, but surely this, too, will come someday soon.) Of course this twenty-fi rst century breakthrough that we call the New Space economy will not come just from new space commerce. It will also come from the amazing new technologies here on Earth. Vital new terrestrial technologies will accompany this cosmic journey into tomorrow. Information technology, robotics, artificial intelligence and commercial space travel systems have now set us on a course to allow us humans to harvest the amazing riches in the skies—new natural resources, new energy, and even totally new ways of looking at the purpose of human existence. If we pursue this course steadfastly, it can be the beginning of a New Space renaissance. But if we don’t seek to realize our ultimate destiny in space, Homo sapiens can end up in the dustbin of history—just like literally millions of already failed species. In each and every one of the five mass extinction events that have occurred over the last 1.5 billion years on Earth, some 50–80 % of all species have gone the way of the T. Rex, the woolly mammoth, and the Dodo bird along with extinct ferns, grasses and cacti. On the other hand, the best days of the human race could be just beginning. If we are smart about how we go about discovering and using these riches in the skies and applying the best of our new technologies, it could be the start of a new beginning for humanity. Konstantin Tsiokovsky, the Russian astronautics pioneer, who fi rst conceived of practical designs for spaceships, famously said: “A planet is the cradle of mankind, but one cannot live in a cradle forever.” Well before Tsiokovsky another genius, Leonardo da Vinci, said, quite poetically: “Once you have tasted flight, you will forever walk the earth with your eyes turned skyward, for there you have been, and there you will always long to return.” The founder of the X-Prize and of Planetary Resources, Inc., Dr. Peter Diamandis, has much more brashly said much the same thing in quite diff erent words when he said: “The meek shall inherit the Earth. The rest of us will go to Mars.” The New Space Billionaires Peter Diamandis is not alone in his thinking. From the list of “visionaries” quoted earlier, Elon Musk, the founder of SpaceX; Sir Richard Branson, the founder of Virgin Galactic; and Paul Allen, the co-founder of Microsoft and the man who financed SpaceShipOne, the world’s first successful spaceplane have all said the future will include a vibrant new space economy. Th ey, and others, have said that we can, we should and we soon shall go into space and realize the bounty that it can offer to us. Th e New Space enterprise is today indeed being led by those so-called space billionaires , who have an exciting vision of the future. They and others in the commercial space economy believe that the exploitation of outer space may open up a new golden age of astral abundance. They see outer space as a new frontier that can be a great source of new materials, energy and various forms of new wealth that might even save us from excesses of the past. Th is gold rush in the skies represents a new beginning. We are not talking about expensive new space ventures funded by NASA or other space agencies in Europe, Japan, China or India. No, these eff orts which we and others call New Space are today being forged by imaginative and resourceful commercial entrepreneurs. Th ese twenty-fi rst century visionaries have the fortitude and zeal to look to the abundance above. New breakthroughs in technology and New Space enterprises may be able to create an “astral life raft” for humanity. Just as Columbus and the Vikings had the imaginative drive that led them to discover the riches of a new world, we now have a cadre of space billionaires that are now leading us into this New Space era of tomorrow. These bold leaders, such as Paul Allen and Sir Richard Branson, plus other space entrepreneurs including Jeff Bezos of Amazon and Blue Origin, and Robert Bigelow, Chairman of Budget Suites and Bigelow Aerospace, not only dream of their future in the space industry but also have billions of dollars in assets. These are the bright stars of an entirely new industry that are leading us into the age of New Space commerce. These space billionaires, each in their own way, are proponents of a new age of astral abundance. Each of them is launching new commercial space industries. They are literally transforming our vision of tomorrow. These new types of entrepreneurial aerospace companies—the New Space enterprises—give new hope and new promise of transforming our world as we know it today. The New Space Frontier What happens in space in the next few decades, plus corresponding new information technologies and advanced robotics, will change our world forever. These changes will redefi ne wealth, change our views of work and employment and upend almost everything we think we know about economics, wealth, jobs, and politics. Th ese changes are about truly disruptive technologies of the most fundamental kinds. If you thought the Internet, smart phones, and spandex were disruptive technologies, just hang on. You have not seen anything yet. In short, if you want to understand a transition more fundamental than the changes brought to the twentieth century world by computers, communications and the Internet, then read this book. There are truly riches in the skies. Near-Earth asteroids largely composed of platinum and rare earth metals have an incredible value. Helium-3 isotopes accessible in outer space could provide clean and abundant energy. There is far more water in outer space than is in our oceans. In the pages that follow we will explain the potential for a cosmic shift in our global economy, our ecology, and our commercial and legal systems. These can take place by the end of this century. And if these changes do not take place we will be in trouble. Our conventional petro-chemical energy systems will fail us economically and eventually blanket us with a hydrocarbon haze of smog that will threaten our health and our very survival. Our rare precious metals that we need for modern electronic appliances will skyrocket in price, and the struggle between “haves” and “have nots” will grow increasingly ugly. A lack of affordable and readily available water, natural resources, food, health care and medical supplies, plus systematic threats to urban security and systemic warfare are the alternatives to astral abundance. The choices between astral abundance and a downward spiral in global standards of living are stark. Within the next few decades these problems will be increasingly real. By then the world may almost be begging for new, out of- the-box thinking. International peace and security will be an indispensable prerequisite for exploitation of astral abundance, as will good government for all. No one nation can be rich and secure when everyone else is poor and insecure. In short, global space security and strategic space defense, mediated by global space agreements, are part of this new pathway to the future.

#### Asteroid mining solves emissions from terrestrial platinum mining---independently solves warming.

MIT Review 18 Emerging Technology [Our mission is to bring about better-informed and more conscious decisions about technology through authoritative, influential, and trustworthy journalism.], 10-19-2018, "Asteroid mining might actually be better for the environment," MIT Technology Review, <https://www.technologyreview.com/2018/10/19/139664/asteroid-mining-might-actually-be-better-for-the-environment/> // ella

For a certain kind of investor, asteroid mining is a path to untold riches. Astronomers have long known that asteroids are rich in otherwise scarce resources such as platinum and water. So an obvious idea is to mine this stuff and return it to Earth—or, in the case of water, to a moon base or Earth-orbiting space station. There is no shortage of interest in these ventures. In the last decade, investors have funded half a dozen companies that have set their sights on various nearby rocks. To many observers, it’s only a matter of time before such a mission gets the green light. But profit margins are only part of the picture. A potentially more significant aspect of these missions is the impact they will have on Earth’s environment. But nobody has assessed this environmental impact in detail. Today, that changes thanks to the work of Andreas Hein and colleagues at the University of Paris-Saclay in France. These guys have calculated the greenhouse-gas emissions from asteroid-mining operations and compared them with the emissions from similar Earth-based activities. Their results provide some eyebrow-raising insights into the benefits that asteroid mining might provide. The calculations are relatively straightforward. Rocket launches release significant amounts of greenhouse gases into the atmosphere. The fuel on board the first stage of a rocket burns in Earth’s atmosphere to form carbon dioxide. For kerosene-burning rockets, one kilogram of fuel creates three kilograms of CO2. (The second and third stages operate outside the Earth’s atmosphere and so can be ignored.) Reentries are just as damaging. That’s because a significant mass of a re-entering vehicle ablates in the upper atmosphere, producing NOx such as nitrous oxide (N2O), a greenhouse gas that is about 300 times more potent than CO2. By one estimate, the space shuttle released about 20% of its mass in the form of N2O every time it returned to Earth. Hein and co use these numbers to calculate that a kilogram of platinum mined from an asteroid would release some 150 kilograms of CO2 into Earth’s atmosphere. However, economies of scale from large asteroid-mining operations could lower this to about 60 kilograms of CO2 per kilogram of platinum. That needs to be compared with the emission from Earth-based mining. Here, platinum mining generates significant greenhouse gases, mostly from the energy it takes to remove this stuff from the ground. Indeed, the numbers are huge. The mining industry estimates that producing one kilogram of platinum on Earth releases around 40,000 kilograms of carbon dioxide. “The global warming effect of Earth-based mining is several orders of magnitude larger,” say Hein and co. The figures for water are also encouraging. In this case, the authors calculate the greenhouse-gas emissions from an asteroid-mining operation that returns water to anywhere within the moon’s orbit, a so-called cis-lunar orbit. They compare this to the emissions from sending the same volume of water from Earth into orbit. The big difference is that a water-carrying vehicle from Earth can haul only a small percentage of its mass as water. But an asteroid-mining spacecraft can transport a significant multiple of its mass as water to cis-lunar orbit. “Substantial savings in greenhouse gas emissions can be achieved,” say Hein and co.

#### Independently, the dust itself is good: it shields the earth from warming and buys us time.

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To combat global warming, scientists in Scotland now suggest an out-of-this-world solution — a giant dust cloud in space, blasted off an asteroid, which would act like a sunshade for Earth. The world is warming and the climate is changing. Although many want to prevent these shifts by reducing emissions of greenhouse gases that trap heat from the sun, some controversially suggest deliberating manipulating the planet's climate with large-scale engineering projects, commonly called geoengineering. Instead of altering the climate by targeting either the oceans or the atmosphere, some researchers have suggested geoengineering projects that would affect the entire planet from space. For instance, projects that reduced the amount of solar radiation Earth receives by 1.7 percent could offset the effects of a global increase in temperature of 3.6 degrees F (2 degrees C). The United Nations' Intergovernmental Panel on Climate Change (IPCC) has noted climate models suggest average global temperatures will likely rise by 2 to 11.5 degrees F (1.1 to 6.4 degrees C) by the end of this century. "A 1.7 percent reduction is very small and will hardly be noticeable on Earth," said researcher Russell Bewick, a space scientist at the University of Strathclyde in Scotland. "People sometimes get the idea of giant screens blocking the entire sun. This is not the case ... as [the device] is constantly between the sun and the Earth, it acts merely as a very light shade or filter." Shading Earth One proposal to shade the Earth from the sun would place giant mirrors in space. The main problem with this concept is the immense cost and effort needed either to build and launch such reflectors or to construct them in outer space — the current cost to launch an object into low Earth orbit runs into thousands of dollars per pound. Another would use blankets of dust to blot out the sun, just as clouds do for Earth. These offer the virtue of simplicity compared with mirrors, but run the risk of getting dispersed over time by solar radiation and the gravitational pull of the sun, moon and planets. Now instead of having a dust cloud floating by itself in space, researchers suggest an asteroid could essentially gravitationally anchor a dust cloud in space to block sunlight and cool the Earth. "I would like to make it clear that I would never suggest geoengineering in place of reducing our carbon emissions," Bewick told LiveScience. Instead, he said, "We can buy time to find a lasting solution to combat Earth’s climate change. The dust cloud is not a permanent cure, but it could offset the effects of climate change for a given time to allow slow-acting measures like carbon capture to take effect."