### 1

#### Counterplan: Property rights for asteroids should be governed by the doctrine of appropriation. Private appropriation of non-asteroid celestial bodies should be prohibited.

#### No link turns -- rules of appropriation solve waste and abstract claims and alternative approaches don’t

Myers 16 -- Ross Myers (J.D. candidate at the University of Oregon Law School.), The Doctrine of Appropriation and Asteroid Mining: Incentivizing the Private Exploration and Development of Outer Space, 2016, Oregon Review of International Law, https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/19850/Meyers.pdf?sequence=1 WJ

Like water during the expansion of the American West, the exploration of space can be financed and incentivized by granting rights in resources to those who secure new resources and put them to beneficial use. Some legal scholars have suggested the traditional rule of capture be applied to asteroids,69 or that rights to asteroids be purchased directly from an international agency and owned as chattel.70 However, like water during America’s westward expansion, asteroids are not easily classified under traditional property regimes. Thus, a doctrine of appropriation would be more appropriate for asteroids than a traditional rule of capture or a chattel system, because a system based on the traditional rule of capture or chattel would result in waste, abstract claims, and complicated legal issues.

First, asteroid claims cannot be adjudicated under the traditional rule of capture, or as chattel, because such systems would be incredibly wasteful. As of now, scientists have observed approximately 450,000 asteroids in our solar system.71

But only a fraction of the observable bodies will be cost effective to mine. While it might one day be possible for a single entity to finance several mining missions at once, current costs associated with such a venture would limit almost any space-mining program to one or two asteroids, at least initially.72 The traditional rule of capture could allow an entity to quickly claim multiple asteroids merely by landing on them and planting a flag, without requiring the entity to show it can reasonably use the resources they have claimed.

Even worse would be a system where the same corporation could claim asteroids simply by discovering their existence and registering the claim. Allowing this type of unregulated claim would incentivize larger corporations capable of space travel to quickly claim reachable asteroids, but the claims could easily outpace those entities’ realistic expectations on what they could use. Under a traditional rule of capture system, the solar system could be divvied up long before the resources could conceivably be mined. A rule similar to the doctrine of appropriation used for water claims in the United States would alleviate this concern by limiting claims to those where a claimant can show a reasonable beneficial use for the resource.

Another concern posed by the traditional rule of capture or chattel system would be the creation of abstract claims. Some legal scholars have advocated for a system where asteroids would be categorized as chattel, and rights in asteroids would be granted to an entity that could identify an asteroid and register ownership of it with an international agency.73 The advantage of such a system would be that it would allow an international agency to keep track of asteroids, and it would allow for the mapping of the reachable solar system. The problem with this approach, however, is that it would result in abstract claims. If an entity could claim the rights to an asteroid without actual possession, there is nothing to prevent that company from claiming ownership long in advance of any real possibility of landing on it. One of the reasons for creating the doctrine of appropriation was to limit abstract claims over resources that were not being used in any reasonable way. Just as the plaintiffs in Hague had no recourse against the third party who wasted the natural gas reserve, there would be no cause of action against an entity that has the rights to an asteroid, but chooses not to exercise them.74 This may be particularly harmful to society because asteroids contain volatiles that may be essential to creating rocket fuel in space, which, in turn, may be crucial to deep space exploration.

Using asteroid-bound volatiles to make rocket fuel would reduce the cost and increase the range of space exploratory missions, possibly improving the human race’s ability to explore and develop space. Under a system were entities could claim asteroids without actual possession, those entities could exclude others from landing on the asteroids and using such resources, even when such resources are languishing unused in space. To prevent the creation of such abstract claims over asteroids, the doctrine of appropriation could be modified as to only grant rights only to entities who are able to demonstrate both actual possession and beneficial use. This would ensure that asteroids claims are limited to those where the resources are actually being used, thus, maximizing the utility of such celestial bodies to society.

Finally, asteroids cannot be adjudicated under the traditional rule of capture or a chattel system because their unique propensity to collide with other celestial bodies would result in vexing legal issues. Pop culture has popularized the notion of an asteroid crashing into the surface of Earth in movies and books, but interspace collisions may be a real concern. Asteroids are constantly moving through space, and they often crash into other asteroids or space debris, and sometimes onto the surface of planets. So real is the concern that space agencies regularly keep track of NEOs, or Near Earth Objects, which include around 10,000 asteroids large enough to be tracked in space.75 Imagine the scenario in the popular movie Armageddon, where society wrestles with the mechanics of destroying a huge asteroid that is headed straight for Earth.76 It would be strange, indeed, if the situation were further complicated by an entity owning the asteroid. Would the Earth have to compensate the company for the loss of resources, or would the company be forced to assume liability for the damage caused by the collision? What if the asteroid, rather than crashing into Earth, crashed instead into another asteroid owned by different entity? It makes sense that a company with actual possession of an asteroid should have a claim for actual mining equipment destroyed, but it seems unreasonable to treat the entire rock as the entity’s chattel. By limiting asteroid claims under a doctrine of appropriation-like system, society will be saved the headache of attempting to adjudicate such absurd situations.

Because the traditional rule of capture or a chattel system for the ownership of asteroids would result in waste, abstract claims, and absurd legal dilemmas, a modified doctrine of appropriation should replace existing outdated international space law relating to asteroids.’

#### Asteroid mining is an unqualified good – it’s essential to advanced asteroid deflection, deep space travel, and fighting climate change

Heise 18 -- Jack Heise (Judicial Law Clerk at U.S. Courts of Appeals), Space, the Final Frontier of Enterprise: Incentivizing Asteroid Mining Under a Revised International Framework, 40 Mich. J. Int'l L. 189 (2018). https://repository.law.umich.edu/mjil/vol40/iss1/5 WJ

Asteroid mining has the potential to facilitate space travel, an outcome the OST holds to be in the interest of humanity as a whole.39 The potential of asteroid mining to reduce the cost of spaceflight, moreover, could facilitate the growth of the space economy. Asteroid mining thus aligns with another stated purposes of the OST in the sense that an expanded space econ- omy could provide substantial benefits to all mankind.40 First, in seeking to face the challenges posed by space travel, the public sector space race gave rise to numerous technological innovations, ranging from LEDs to emergency blankets to memory foam.41 It seems likely that the private space race would result in a similar degree of innovation, the products of which could benefit people across the globe.

Second, a successful mission to Mars could provide benefits beyond a mere sense of interplanetary accomplishment. NASA suggests that, given the parallels between the formation and evolution of Mars and Earth, a voyage there could help “us learn more about our own planet’s history and future.”42 The scientific advancements from such a mission cannot currently be anticipated and are difficult to predict, but “expand[ing] the frontiers of knowledge” in this manner could well bring benefits to all mankind.43

Third, the development of asteroid mining technology could also help advance asteroid diversion tactics. The development of the technology required to conduct successful asteroid mining operations could “help us to divert any incoming asteroids.”44 This is of great importance since NASA recently eliminated its Asteroid Redirect Mission due to funding cuts;45 NASA’s project was hailed by some scientists as a “critical step in demonstrating we can protect our planet from a future asteroid impact . . . .”46 Asteroid mining could step in and fill an important void. While the probability of an Armageddon-causing impact is low, the effects of an impact would be extremely severe.47 Even some mitigation of this risk as a byproduct of as- teroid mining would be a benefit to humanity as a whole.

Finally, reduced launch costs could facilitate measures to combat global climate change. One proposed solution for canceling out predicted increases in average worldwide temperature is to “prevent[] . . . about 1% of incoming solar radiation—insolation—from reaching the Earth. This could be done by scattering into space from the vicinity of Earth an appropriately small frac- tion of total insolation.”48 Asteroid mining could facilitate such measures in that “[t]echnologies that could greatly decrease the cost of space-launch could make a telling difference in the practicality of all types of space- deployed scattering systems of scales appropriate to insolation modulation.”49 There are certainly intermediate measures to combat climate change that ought to be taken first, but asteroid mining would facilitate this expedited solution. While some of the benefits of asteroid mining would doubtless accrue primarily to those nations with asteroid mining companies within their borders, the benefits noted in this section—space exploration as a gen- eral proposition, technological and scientific development, improvement of asteroid diversion technology, and facilitated means of swiftly countering climate change—would inure substantially to the benefit of all mankind.

#### Asteroids have no significance beyond their finite resources – property rights for asteroids are necessary for deep space travel and rare metals

Myers 16 -- Ross Myers (J.D. candidate at the University of Oregon Law School.), The Doctrine of Appropriation and Asteroid Mining: Incentivizing the Private Exploration and Development of Outer Space, 2016, Oregon Review of International Law, https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/19850/Meyers.pdf?sequence=1 WJ

Asteroids are “metallic, rocky bodies without atmospheres that orbit the sun and are too small to be classified as planets.”33 Like water, asteroids are limited resources that are unconnected to any form of real property. Asteroids vary greatly in size, and are believed to consist primarily of metals and water, sometimes in staggering quantities.34 As such, asteroids may contain significant resources that would help serve to incentivize and facilitate the exploration of space.

Asteroids can be divided into classes, the three most commercially relevant being C-type, M-type, and S-type.35 C-type asteroids (carbonaceous) are the most common variety, and approximately half of the near Earth asteroids that are at least 1km large are C-type asteroids.36 These asteroids have a high content of water, hydrogen, and methane, all of which could potentially be mined to create rocket fuel on-site.37 Rocket fuel storage provides a limit on how far space vessels can be sent into deep space, so the creation of rocket fuel on asteroids would allow missions to probe deeper into space without having to bring enough fuel for a return trip. This could reduce the cost and difficulty of such endeavors significantly, allowing for more efficient exploration and development of deep space.

M-type asteroids (metallic) have the high radar reflectivity characteristic of metals,38 and are probably the most economically attractive targets for mining missions because of the commercial value of the metals in an Earth market. S-type asteroids (stony) are rocky mixtures of silicates, sulphides, and metals,39 but the metals they contain may not be as valuable as those found in M-type asteroids, so they will probably not be the target of initial space mining missions.

Recent scientific reports have suggested a single asteroid may contain staggering quantities of rare metals.40 One report estimated that a moderately sized (1 km) M-type asteroid with a fair enrichment in platinum group metals may contain twice the tonnage of platinum group metals already harvested on Earth combined with economically viable platinum group metal resources still in the ground.41 Put simply, it is believed a single asteroid could contain more platinum than has ever been mined or ever will be mined on Earth. While the economic gain from a mining mission on such an asteroid would be offset by the huge initial cost of reaching the asteroid and capturing the metals, this figure suggests mining missions to asteroids could be extremely profitable. Planetary Resources, a fledgling asteroid mining company, has already targeted a metallic asteroid for a possible future mining mission.42 According to Planetary Resources, this single asteroid may contain more platinum than has ever been mined on Earth.43

Scientific reports have also suggested asteroids may contain large quantities of volatiles, such as hydrogen and methane, which could potentially be broken down and used to synthesize rocket fuel and transport spacecraft between space environments.44 Several companies are already researching how to successfully mine the metals contained in asteroids by using frozen water contained in the asteroid to produce rocket fuel for a return journey.45

Asteroids are similar to water in many respects: both have economic and practical importance and limited availability; both exist as floating objects unconnected to land; and both are practically and commercially important to society and many different industries both in the context of space travel, and in the context of natural resource acquisition. However, unlike water, under the current international treaties regarding space, claims by either private or government entities on celestial objects are prohibited.46

#### Appropriation” means to take as property which includes mining

This definition is 100x better than any neg evidence – it’s contextual to space mining and the OST. It also conducts a common-use analysis of the word and a historical analysis of the OST’s writing and concludes that both support that appropriation includes mining

Leon 18 (Amanda M., Associate, Caplin & Drysdale, JD UVA Law) "Mining for Meaning: An Examination of the Legality of Property Rights in Space Resources." Virginia Law Review, vol. 104, no. 3, May 2018, p. 497-547. HeinOnline.

Appropriation. The term "appropriation" also remains ambiguous. Webster's defines the verb "appropriate" as "to take to oneself in exclusion of others; to claim or use as by an exclusive or pre-eminent right; as, let no man appropriate a common benefit."16 5 Similarly, Black's Law Dictionary describes "appropriate" as an act "[t]o make a thing one's own; to make a thing the subject of property; to exercise dominion over an object to the extent, and for the purpose, of making it subserve one's own proper use or pleasure."166 Oftentimes, appropriation refers to the setting aside of government funds, the taking of land for public purposes, or a tort of wrongfully taking another's property as one's own. The term appropriation is often used not only with respect to real property but also with water. According to U.S. case law, a person completes an appropriation of water by diversion of the water and an application of the water to beneficial use.167 This common use of the term "appropriation" with respect to water illustrates two key points: (1) the term applies to natural resources-e.g., water or minerals-not just real property, and (2) mining space resources and putting them to beneficial use-e.g., selling or manufacturing the mined resources could reasonably be interpreted as an "appropriation" of outer space. While the ordinary meaning of "appropriation" reasonably includes the taking of natural resources as well as land, whether the drafters and parties to the OST envisioned such a broad meaning of the term remains difficult to determine with any certainty. The prohibition against appropriation "by any other means" supports such a reading, though, by expanding the prohibition to other types not explicitly described.168

As illustrated by this analysis, considerable ambiguity remains after this ordinary-meaning analysis and thus, the question of Treaty obligations and property rights remains unresolved. In order to resolve these ambiguities, an analysis of preparatory materials, historical context, and state practice follows.

2. Preparatory Materials

A review of meeting reports of the Committee on the Peaceful Uses of Outer Space and its Legal Sub-Committee regarding the Treaty reveals little to clear up the ambiguities of Articles I and II of the OST. In fact, the reports indicate that, despite several negotiating states expressing concern about the lack of clarity with respect to the meaning of "use" and the scope of the non-appropriation principle, no meaningful discussion occurred and no consensus was reached.16 9 Some commentators still conclude that the preparatory work does in fact confirm the drafters' intent for "use" to include exploitation. 170 These commentators do admit, however, that discussions of the term "exploitation" supporting their conclusion focused on remote sensing and communications satellites rather than on resource extraction.17 1 Further skepticism about such an intent for "use" to include "exploitation" also arises given the uncertainty amongst negotiating states about the meaning of these terms. A mere few months before the Treaty opened for signature in January 1967, negotiators were still asking questions about the meaning of "use" during the last few Legal Sub-Committee meetings. For example, in July 1966, the representative of France inquired: "Did the latter term ["use"] imply use for exploration purposes, such as the launching of satellites, or did it mean use in the sense of exploitation, which would involve far more complex issues?" 172 The representative noted that while some activities such as extraction of minerals were difficult to imagine presently, "[i]t was important for all States, and not only those engaged in space exploration, to know exactly what was meant by the term 'use.'173 In the same meeting, the representative from the USSR offered an interesting response to the question posed by the representative of France:

[A]dequate clarification was to be found in article II of the USSR draft, which specified that outer space and celestial bodies should not be subject to national appropriation by means of use or occupation, or by any other means. In other words no human activity on the moon or any other celestial body could be taken as justification for national appropriation. 174

This response implies that Article II acts as a qualification on Article I's broad provision for free exploration and use of outer space by all. Activity such as resource extraction would be viewed as national appropriation and such activity cannot be justified given Article II's prohibition, not even by falling within the ordinary meaning of "use." Despite this clarification, uncertainty appears to have remained, as lingering concerns were communicated in subsequent meetings by several other states, including Australia, Austria, and France."' Nevertheless, the committee put the Treaty in front of the General Assembly two months later without final resolution of the ambiguities regarding property rights arising from Articles I and II176 The preparatory materials ultimately fail to fully clarify the ambiguities of the meanings of "use" and "appropriation." The statement of the representative of the Soviet Union, one of the two main drafting parties, does, however, help push back on the interpretation of some academics that the nonappropriation principle fails to overcome the presumption of freedom of use.7

3. Historical Context

Two interrelated, major historical events cannot be ignored when considering the meaning of the OST: (1) the Cold War and (2) the Space Race. The success of Sputnik I in 1957 showed space travel and exploration no longer to be a dream, but a reality.7 While exciting, this news also brought fear in light of the world's fragile balance of power and tensions between the United States and the Soviet Union. 17 9 What if the Soviet Union managed to launch a nuclear weapon into space? What if the United States greedily claimed the Moon as the fifty-first state? To many, the combination of the Cold War and Space Race made the late 1950s and the 1960s a perilous time.so When viewed as a response to this perilous era, the OST begins to look much more like a nuclear arms treaty and an attempt to ease Cold War tensions than a treaty concerned with the issue of property rights in space."' The Treaty's emphasis on "peaceful purposes" supports this contextual interpretation. 1 82

On the one hand, as many suggest, this context leads to the conclusion that the vague nonappropriation principle of Article II does not prevent private property rights in space resources and the presumption of broad "use" prevails.1 83 Private property rights were simply not a concern of the Treaty drafters and therefore, the Treaty does not address-nor prohibit-such claims. On the other hand, the context surrounding the treaty's drafting does not necessarily lead to this conclusion. In fact, the emphasis on "peaceful purposes" and reducing international tension might instead suggest a stricter reading of Articles I and II. If things were so unstable and tense on Earth, the drafters may have instead intended Article II as a qualification on the general right to explore and use outer space in Article I, recognizing the simple fact that disputes over property, both land and minerals, have sparked some of history's bloodiest conflicts.

The Antarctic treaty experience evidences Cold War concern over potential resource rights disputes. Leading up to the finalization of the Antarctic Treaty of 1959,184 seven nations had already made official territorial claims over varying portions of the frozen landscape in hopes of laying claim to the plethora of resources thought to be located within the subsurface."' Although the Treaty itself did not directly address rights to mineral resources in the Antarctic,186 the treaty is interpreted to have frozen these claims in the interest of "[f]reedom of scientific investigation in Antarctica and cooperation toward that end.""' In a manner notably similar to the terms of Articles XI and XII of the OST, the Treaty promotes scientific exploration by encouraging information sharing of scientific program plans, personnel, and observations' and inspection of stations on a reciprocal basis.189 This Treaty along with several later treaties and protocols constitute the "Antarctic Treaty System," which as a whole manages the governance of Antarctica.1 9 0 In 1991, the Protocol on Environmental Protection to the Antarctic Treaty 91 ("Madrid Protocol") settled the question of property rights for the fifty years following the Protocol's entry into force. 192 The Madrid Protocol provides for "the comprehensive protection of the Antarctic environment ... [and] designate[s] Antarctica as a natural reserve, devoted to peace and science."193 Article 7 explicitly-and simplystates "[a]ny activity relating to mineral resources, other than scientific research, shall be prohibited."1 94 Though Article 25 allows for the creation of a binding legal regime to determine whether and under what conditions mineral resource activity be allowed, no such international legal regime has been created to date. 195 The ban on mineral resource exploitation may only be amended by unanimous consent of the parties. 19 6 The United States signed and ratified both the Antarctic Treaty of 1959 and the Madrid Protocol. 197

The freezing of territorial claims in the Antarctic 98 by the Antarctica Treaty of 1959199 illustrates the existence of true concern over potential resource dispute and conflict during the Cold War, in addition to the major concerns posed by nuclear weapons.2 00 The drafting states also recognized the potential for conflict over property in outer space and drew on the language of the Antarctic Treaty of 1959 to draft the OST.2 01 Given these driving concerns, Article II could be reasonably read as qualifying Article I's general rule. Under this reading, Article II serves the same qualifying purpose as Article IV regarding military and nuclear weapon use in space. Some might push back on this interpretation by claiming that the drafters could have used language such as that in the Madrid Protocol to explicitly prohibit mining in space. However, this argument is flawed. The Madrid Protocol was not written until well after both the original Antarctic Treaty of 1959 and the OST. Furthermore, the timing of the Madrid Protocol perhaps provides further evidence that resources in space are not to be harvested until a subsequent agreement regarding rights over them can be agreed upon internationally. While the historical context does leave some ambiguity as to whether the OST permits property rights over space resources, the Antarctic experience provides a compelling analogy and suggests that the OST does not allow for property rights in space resources.

4. State Practice

In its Frequently Asked Questions released about the SREU Act, the House Committee on Science, Space, and Technology forcefully asserted that the Act does not violate international law.20 2 in fact, according to the committee, the Act's provision of property rights "is affirmed by State practice and by the U.S. State Department in [c]ongressional testimony and written correspondence."2 03 Proponents of this view base their beliefs on several examples. One, "no serious objection" arose to the United States and the Soviet Union bringing samples of rocks and other materials from the Moon back by manned and robotic missions in the late 1960s, nor to Japan successfully collecting a small asteroid sample in 2010.204 Two, a practice of respecting ownership over such retrieved samples and a terrestrial market for such items exists, as illustrated by the fact that no one doubts that the American Museum of Natural History "owns" three asteroids found in Greenland by arctic explorer Robert E. Peary that are now part of the museum's Arthur Ross Hall of Meteorites. 205 Three, Congressmen also cite to a federal district court case, United States v. One Lucite Ball Containing Lunar Material,2 06 to illustrate state practice in favor of ownership over spaces resources. The case involved an Apollo lunar sample gifted to Honduras by the United States. The sample was stolen and sold to an individual in the United States.2 07 When caught during a sting operation intended to uncover illegal sales of imposter samples, the buyer was forced to forfeit the lunar sample after the court concluded the moon rocks had in fact been stolen, basing its decision in part on its recognition of Honduras having national property ownership over the sample. 208

These examples appear overwhelming, but they are not actually examples of activities of the same "form and content" that the SREU Act approves. 2 09 These examples all involve collection of samples in limited amounts and for scientific purposes, while the SREU Act approves large-scale collection and for commercial exploitation. The OST explicitly emphasizes a "freedom of scientific investigation in outer space," and the collection of scientific samples reasonably fall under this enumerated right. 2 10 Alternatively, the OST says nothing with respect to commercial exploitation, only discussing "benefits" of space in terms of sharing those benefits with all mankind.211 Furthermore, the American Museum of Natural History and Lucite Ball examples relied upon are misleading because they suggest that types of celestial artifacts found or gifted on Earth are subject to the same legal regime as resources mined or collected in space, which may not necessarily be true. The analogy of ownership over fish extracted from the high seas is also often cited in response to this pushback. Much like outer space, the high seas are open to all participants, yet the law of the seas still recognizes the right to title over fish extracted on the high seas by fishermen, who can then sell the fish.212 But again, this analogy has limited import because both the 1958 Geneva Convention on the High Seas and the United Nations Convention on the Law of the Sea ("UNCLOS") explicitly recognize the right to fish, while the OST grants no such right to exploit space resources. 2 1 3

Furthermore, state practice relevant to the question of property rights under the OST goes beyond these examples and analogies of ownership of resources taken from commons. State practice regarding property rights in general must be considered. For example, Professor Fabio Tronchetti disagrees with the oft-cited notion that state practice affirms the SREU Act.2 14 According to the professor, "under international law, property rights require a superior authority, a State, entitled to attribute and enforce them." 2 15 By granting property rights in the SREU Act, the United States impliedly claims that it has the authority to confer property rights over space resources-an authority traditionally reserved for the owner of a resource. This notion clashes with the nonappropriation principles of the OST. Though there is no consensus regarding whether the nonappropriation principle prohibits claims of sovereignty over resources, a strong consensus at least exists that the principle prohibits states from claiming sovereignty over real property in space.216 In some traditional systems of mineral ownership, however, ownership over resources ran with ownership over land.217 For example, under Roman law, property rights over subsurface minerals belonged to the landowner. 2 18 Thus, if the United States cannot have title in space lands under the nonappropriation principle, it cannot have title to the space resources in those lands either. Without title to the resources, the United States cannot bestow such title to its citizens under traditional international property law; by claiming that it can bestow such title, the United States is abrogating Article II of the OST. One could also argue that the in situ resources the Act grants rights in are actually still part of the celestial bodies; thus, the resources are real property prior to their removal, and are off limits under the Treaty.2 19 Given the limited import of the cited examples of state practice (limited quantity and scientific versus large-scale and commercial), the traditional practice of property rights being conferred from a sovereign to a citizen become incredibly compelling and suggest the SREU Act may abrogate the United States' treaty obligations.

A final piece of evidence, however, again inserts ambiguity into the interpretation: the sweeping rejection of the Moon Agreement and its limitations on property rights by the international community discussed supra Part JJJ.A.2. On the one hand, the rejection may imply that the international community approved of property rights. On the other hand, however, there were other reasons for the sweeping rejection. For example, Professors Francis Lyall and Paul B. Larsen claim the "main area of controversy"2 2 0 actually surrounded the Agreement's proclamation of the Moon and celestial bodies and their natural resources as the "common heritage of mankind" in Article 11.1,221 rather than the Agreement's general property-right provisions. Many believed the invocation of the "common heritage of mankind" language would impart actual obligations upon parties to share extracted resources, whereas the "province of all mankind" and "for the benefit and interest of all" language of the OST did not.222 As with ordinary meaning, preparatory materials, and historical context, state practice leaves some ambiguities and state interpretations should also be considered.

5. State Interpretations

Much like the preparatory materials discussed supra Part IV.A.1, subsequent state interpretation of the OST fails to fully address the question of the legality of property rights in space resources. On the one hand, the Senate Committee on Foreign Relations found that the drafters intended Articles I, II, and III of the Treaty to be general in nature when reviewing the Treaty,223 which perhaps suggests Article II's nonappropriation principle does not qualify Article I's general right to use or act as an exception. Yet, the committee also found the Treaty to be in response to the "potential for international competition and conflict in outer space." 2 24 To the committee, Articles I, II, and III stressed the importance of free scientific investigation, guaranteed free access to all areas of celestial bodies, and prohibited claims of sovereignty.225 Not only would property rights in natural resources potentially ignite and exacerbate conflict in space, but they also seemed somewhat incompatible with scientific investigation, free access, and the prohibition on sovereignty. During its hearing on the Treaty, the Senate Committee on Foreign Relations focused a majority of its discussion of Article I on whether or not the language "province of all mankind" imparted strict obligations, while devoting little to no time to the issue of the meaning of "use." 22 6 Former Justice Arthur Goldberg, then U.S. ambassador to the United Nations, did note the goal of the article was to "cnot subject space to exclusive appropriation by any particular power." 227 Nevertheless, this statement fails to resolve whether natural resources may be exploited, as such exploitation could be carried out in an inclusive manner.

The committee's review of Article II consumes only eight lines of the hearing transcript, merely adding that the Article is complementary to Article I and that space cannot be claimed for the country (likely referring to land rather than resources).2 28 A different exchange between Ambassador Goldberg, Senator Lausche, and the Chairman leaves further ambiguity regarding the use of natural resources in space: Mr. Goldberg: We wanted to establish our right to explore and use outer space. Senator Lausche: Yes. That is, any one of the signatory nations shall have the right to the use of whatever might be found in one of the space bodies. Mr. Goldberg: No, no. It doesn't mean that. It means that they shall be free on their own to explore outer space. The Chairman: Or to use it. Mr. Goldberg: To use it. The Chairman: But not on an exclusive basis. Mr. Goldberg: Everyone is free.229

At first, Ambassador Goldberg appears to have refuted the notion that a signatory could simply "use" anything found in one of the space bodies, such as a mineral, implying Senator Lausche's example exceeded the scope of Article I. He then went on to emphasize exploratory activities. But then, Ambassador Goldberg backtracked and reasserted the right to use without clarifying his initial qualification.

This sense of ambiguity remains today despite Congress signing off on the SREU Act. While sponsors of the bill and statements from resource extraction companies emphasized the broad scope of the right to "use" outer space and state practice in support of the legality of 230 property rights, several expert witnesses expressed genuine concern that obligations under the Treaty remain unclear and require additional analysis.231

B. Compatibility

Employing the treaty interpretation tools of ordinary meaning, preparatory materials, historical context, state practice, and state interpretation offers many possible understandings of the obligations imparted by Articles I and II of the OST. For example, while the ordinary meaning of "use" could reasonably include the exploitation of materials, the meeting summaries of the Fifth Session of the U.N. Committee on the Peaceful Uses of Outer Space Legal Sub-Committee make clear that no consensus was ever reached regarding whether "use" includes large-scale exploitation of space resources, let alone fee-simple ownership and the ability to sell commercially. State practice dealing with extraterrestrial samples also sheds little light on the confusion, as the examples cited all deal instead with scientific samples of limited quantity. The international community's rejection of the Moon Agreement also fails to bring clarity. While on the one hand the rejection could be read as a rejection of the idea that the OST prohibits private property rights, it could also be read as a rejection of the common heritage of mankind doctrine. Finally, the prospect of privateventure space mining and extraterrestrial resource extraction remained far off and futuristic at the time of the Treaty's negotiation, making drawing legal conclusions about the legality of these revolutionary activities extremely difficult.

Overall, however, the Treaty's structure and its purposes (preserving peace and avoiding international conflict in outer space) ultimately indicate that private property rights in space resources are prohibited by Article II's non-appropriation principle, at least until future international delegation determines otherwise (like in the Antarctic). The Treaty's structure confirms this interpretation. Article I lays down a general rule for activity in space. Subsequent articles of the Treaty then lay out more specific requirements of and qualifications to this general rule. Much like Article IV restricts the use of nuclear weapons in space, Article II restricts the use of space in ways that might result in potentially controversial property claims. Historically, claims to mineral rights have resulted in just as contentious conflict as those over sovereign lands. Treaty efforts to avoid conflicts in Antarctica and the high seas reflect similar sentiments. The Soviet Union's representative even hinted at this structural relationship between Articles I and II during Treaty S1 232 negotiations.22 In light of the imminent need to ease Cold War tensions, the potential for conflict over property, and the final structure of the Treaty, this Note concludes that the large-scale extraction of space resources is incompatible with the non-appropriation principle of Article II of the OST.23 3 As a result, the United States' provision of property rights to its citizens to possess, own, transport, use, and sell space and asteroid resources extracted through the SREU Act contravenes its international obligations established by the OST.

\*\*READ NEBEL CI/STANDARDS IF THEIR INTERP SAYS SPEC BAD\*\*

### 2

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

#### 1] Extinction outweighs under any framework

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

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

#### 2] Phenomenal introspection --- it’s the most epistemically reliable --- historical moral disagreement over internal conceptions of morality such as questions of race, gender, class, religion, etc prove the fallibility of non-observational based ethics --- introspection means we value happiness because we can determine that we each value it --- just as I can observe a lemon’s yellowness, we can make those judgements about happiness.

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

#### 4] No intent-foresight distinction – If we foresee a consequence, then it becomes part of our deliberation which makes it intrinsic to our action since we intend it to happen

#### 5] Reject calc indicts:

#### A] Empirically denied—both individuals and policymakers carry out effective cost-benefit analysis which means even if decisions aren’t always perfect it’s still better than not acting at all

#### B] Theory—they’re functionally NIBs that everyone knows are silly but skew the aff and move the debate away from the topic and actual philosophical debate, killing valuable education

#### 6] Governments must aggregate because their policies benefit some and harm others so the only non-arbitrary way to prioritize is by helping the most amount of people. o/w since different agents have different ethical obligations

Mack 4 [(Peter, MBBS, FRCS(Ed), FRCS (Glasg), PhD, MBA, MHlthEcon) “Utilitarian Ethics in Healthcare.” International Journal of the Computer, the Internet, and Management Vol. 12, No.3. 2004. Department of Surgery. Singapore General Hospital.] SJDI

Medicine is a costly science, but of greater concern to the health economist is that it is also a limitless art. Every medical advance created new needs that did not exist until the means of meeting them came into existence. Physicians are reputed to have an infinite capacity to do ever more things, and perform ever more expensive interventions for their patients so long as any of their patients’ health needs remain unfulfilled. The traditional stance of the physician is that each patient is an isolated universe. When confronted with a situation in which his duty involves a competition for scarce medications or treatments, he would plead the patient’s cause by all methods, short of deceit. However, when the physician’s decision involves more than just his own patient, or has some commitment to public health, other issues have to be considered. He then has to recognise that the unbridled advocacy of the patient may not square with what the economist perceives to be the most advantageous policy to society as a whole. Medical professionals characteristically deplore scarcities. Many of them are simply not prepared to modify their intransigent principle of unwavering duty to their patients’ individual interest. However, in decisions involving multiple patients, making available more medication, labour or expenses for one patient will mean leaving less for another. The physician is then compelled by his competing loyalties to enter into a decision mode of one versus many, where the underlying constraint is one of finiteness of the commodities. Although the medical treatment may be simple and inexpensive in many instances, there are situations such as in renal dialysis, where prioritisation of treatment poses a moral dilemma because some patients will be denied the treatment and perish. Ethics and economics share areas of overlap. They both deal with how people should behave, what policies the state should pursue and what obligations citizens owe to their governments. The centrality of the human person in both normative economics and normative ethics is pertinent to this discussion. Economics is the study of human action in the marketplace whereas ethics deals with the “rightness” or “wrongness” of human action in general. Both disciplines are rooted in human reason and human nature and the two disciplines intersect at the human person and the analysis of human action. From the economist’s perspective, ethics is identified with the investigation of rationally justifiable bases for resolving conflict among persons with divergent aims and who share a common world. Because of the scarcity of resources, one’s success is another person’s failure. Therefore ethics search for rationally justifiable standards for the resolution of interpersonal conflict. While the realities of human life have given rise to the concepts of property, justice and scarcity, the management of scarcity requires the exercise of choice, since having more of some goods means having less of others. Exercising choice in turn involves comparisons, and comparisons are based on principles. As ethicists, the meaning of these principles must be sought in the moral basis that implementing them would require. For instance, if the implementation of distributive justice in healthcare is founded on the basis of welfare-based principles, as opposed to say resource-based principles, it means that the health system is motivated by the idea that what is of primary moral importance is the level of welfare of the people. This means that all distributive questions should be settled according to which distribution maximises welfare. Utilitarianism is fundamentally welfarist in its philosophy. Application of the principle to healthcare requires a prior understanding of the welfarist theory as expounded by the economist. Conceptually, welfarist theory is built on four tenets: utility maximisation, consumer sovereignty, consequentialism and welfarism. Utility maximisation embodies the behavioural proposition that individuals choose rationally, but it does not address the morality of rational choice. Consumer sovereignty is the maxim that individuals are the best judge of their own welfare. Consequentialism holds that any action or choice must be judged exclusively in terms of outcomes. Welfarism is the proposition that the “goodness” of the resource allocation be judged solely on the welfare or utility levels in that situation. Taken together these four tenets require that a policy be judged solely in terms of the resulting utilities achieved by individuals as assessed by the individuals themselves. Issues of who receives the utility, the source of the utility and any non-utility aspects of the situation are ignored.

#### 7] Psychological evidence proves we don’t identify with our future selves.

Opar 14. Alisa Opar (articles editor at Audubon magazine; cites Hal Hershfield, an assistant professor at New York University’s Stern School of Business; and Emily Pronin, a psychologist at Princeton) “Why We Procrastinate” Nautilus January 2014

“The British philosopher Derek Parfit espoused a severely reductionist view of personal identity in his seminal book, Reasons and Persons: It does not exist, at least not in the way we usually consider it. We humans, Parfit argued, are not a consistent identity moving through time, but a chain of successive selves, each tangentially linked to, and yet distinct from, the previous and subsequent ones. The boy who begins to smoke despite knowing that he may suffer from the habit decades later should not be judged harshly: “This boy does not identify with his future self,” Parfit wrote. “His attitude towards this future self is in some ways like his attitude to other people.” Parfit’s view was controversial even among philosophers. But psychologists are beginning to understand that it may accurately describe our attitudes towards our own decision-making: It turns out that we see our future selves as strangers. Though we will inevitably share their fates, the people we will become in a decade, quarter century, or more, are unknown to us. This impedes our ability to make good choices on their—which of course is our own—behalf. That bright, shiny New Year’s resolution? If you feel perfectly justified in breaking it, it may be because it feels like it was a promise someone else made. “It’s kind of a weird notion,” says Hal Hershfield, an assistant professor at New York University’s Stern School of Business. “On a psychological and emotional level we really consider that future self as if it’s another person.” Using MRI, Hershfield and colleagues studied brain activity changes when people imagine their future and consider their present. They homed in on two areas of the brain called the medial prefrontal cortex and the rostral anterior cingulate cortex, which are more active when a subject thinks about himself than when he thinks of someone else. They found these same areas were more strongly activated when subjects thought of themselves today, than of themselves in the future. Their future self “felt” like somebody else. In fact, their neural activity when they described themselves in a decade was similar to that when they described Matt Damon or Natalie Portman. And subjects whose brain activity changed the most when they spoke about their future selves were the least likely to favor large long-term financial gains over small immediate ones. Emily Pronin, a psychologist at Princeton, has come to similar conclusions in her research. In a 2008 study, Pronin and her team told college students that they were taking part in an experiment on disgust that required drinking a concoction made of ketchup and soy sauce. The more they, their future selves, or other students consumed, they were told, the greater the benefit to science. Students who were told they’d have to down the distasteful quaff that day committed to consuming two tablespoons. But those that were committing their future selves (the following semester) or other students to participate agreed to guzzle an average of half a cup. We think of our future selves, says Pronin, like we think of others: in the third person.