### 1

#### Interpretation---“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

#### Violation---starlink doesn’t create exclusive control of any part of space it just creates satellites

#### Standards---

#### 1] Limits—their interp means that affs about any outer space activity are topical: tourism, photography, sending rovers, collecting ice cores, launching satellites, deflecting debris, can’t sell rocks on EBAY, etc. This explodes neg prep burdens since affs are pushed to the fringes of the topic where no neg lit exists

#### 2] Ground—they shift the controversy from sovereign domination to minute activity. The topic literature is grounded in a debate over sovereign control over space, which means core neg generics are space ownership bad, space democracy bad, not temporary resource extraction or expeditions. Their interp minimizes link uniqueness because our impacts will never be overcome the advantage.

#### Fairness – debate is a competitive activity that requires fairness for objective evaluation.

#### Education – only thing portable from debate we care about what we learn not if we’re fair

#### T is drop the debater –

#### A]their abusive advocacy skewed the debate from the start

#### B] Drop the argument is incoherent because we indict their advocacy

#### Use competing interps on T –

#### A] topicality is a yes/no question, you can’t be reasonably topical

#### B] only our interp sets norms -- reasonability is arbitrary and invites judge intervention

#### C] reasonability causes a race to the bottom of questionable argumentation

#### No RVIs –

#### A] Forcing the 1NC to go all in on the shell kills substance education and neg strat

#### B] discourages checking real abuse

#### C] Encourages baiting – outweighs because if the shell is frivolous, they can beat it quickly

### 2

#### Settler colonialism is a permeating structure that operates via the promotion of the nation-state – it thrives off of the elimination of indigenous people and their relationship to land – that appropriation turns them into ghost and chattel slaves into mere excess labor

Tuck and Yang 12 (Eve Tuck and Wayne Yang; 2012; Decolonization: Indigeneity, Education & Society Vol. 1, No. 1, 2012, pp. 1-40; *“Decolonization is not a metaphor”*; accessed 12/7/21; <https://clas.osu.edu/sites/clas.osu.edu/files/Tuck%20and%20Yang%202012%20Decolonization%20is%20not%20a%20metaphor.pdf>; Eve Tuck is a Unangax̂ scholar in the field of Indigenous studies and educational research. Tuck is the associate professor of critical race and indigenous studies at the Ontario Institute for Studies in Education at the University of Toronto; K. Wayne Yang is Provost of John Muir College and Professor of Ethnic Studies at the University of California, San Diego; pages 5-7) HB \*brackets in original\* \*They use masculine pronouns to describe the settler not through direct association of the settler as a man but rather a dominating subject characterized as hypermasculine\*

Our intention in this descriptive exercise is not be exhaustive, or even inarguable; instead, we wish to emphasize that (a) decolonization will take a different shape in each of these contexts - though they can overlap4 - and that (b) neither external nor internal colonialism adequately describe the form of colonialism which operates in the United States or other nation-states in which the colonizer comes to stay. Settler colonialism operates through internal/external colonial modes simultaneously because there is no spatial separation between metropole and colony. For example, in the United States, many Indigenous peoples have been forcibly removed from their homelands onto reservations, indentured, and abducted into state custody, signaling the form of colonization as simultaneously internal (via boarding schools and other biopolitical modes of control) and external (via uranium mining on Indigenous land in the US Southwest and oil extraction on Indigenous land in Alaska) with a frontier (the US military still nicknames all enemy territory “Indian Country”). The horizons of the settler colonial nation-state are total and require a mode of total appropriation of Indigenous life and land, rather than the selective expropriation of profit-producing fragments. Settler colonialism is different from other forms of colonialism in that settlers come with the intention of making a new home on the land, a homemaking that insists on settler sovereignty over all things in their new domain. Thus, relying solely on postcolonial literatures or theories of coloniality that ignore settler colonialism will not help to envision the shape that decolonization must take in settler colonial contexts. Within settler colonialism, the most important concern is land/water/air/subterranean earth (land, for shorthand, in this article.) Land is what is most valuable, contested, required. This is both because the settlers make Indigenous land their new home and source of capital, and also because the disruption of Indigenous relationships to land represents a profound epistemic, ontological, cosmological violence. This violence is not temporally contained in the arrival of the settler but is reasserted each day of occupation. This is why Patrick Wolfe (1999) emphasizes that settler colonialism is a structure and not an event. In the process of settler colonialism, land is remade into property and human relationships to land are restricted to the relationship of the owner to his property. Epistemological, ontological, and cosmological relationships to land are interred, indeed made pre-modern and backward. Made savage. In order for the settlers to make a place their home, they must destroy and disappear the Indigenous peoples that live there. Indigenous peoples are those who have creation stories, not colonization stories, about how we/they came to be in a particular place - indeed how we/they came to be a place. Our/their relationships to land comprise our/their epistemologies, ontologies, and cosmologies. For the settlers, Indigenous peoples are in the way and, in the destruction of Indigenous peoples, Indigenous communities, and over time and through law and policy, Indigenous peoples’ claims to land under settler regimes, land is recast as property and as a resource. Indigenous peoples must be erased, must be made into ghosts (Tuck and Ree, forthcoming). At the same time, settler colonialism involves the subjugation and forced labor of chattel slaves5 , whose bodies and lives become the property, and who are kept landless. Slavery in settler colonial contexts is distinct from other forms of indenture whereby excess labor is extracted from persons. First, chattels are commodities of labor and therefore it is the slave’s person that is the excess. Second, unlike workers who may aspire to own land, the slave’s very presence on the land is already an excess that must be dis-located. Thus, the slave is a desirable commodity but the person underneath is imprisonable, punishable, and murderable. The violence of keeping/killing the chattel slave makes them deathlike monsters in the settler imagination; they are reconfigured/disfigured as the threat, the razor’s edge of safety and terror. The settler, if known by his actions and how he justifies them, sees himself as holding dominion over the earth and its flora and fauna, as the anthropocentric normal, and as more developed, more human, more deserving than other groups or species. The settler is making a new "home" and that home is rooted in a homesteading worldview where the wild land and wild people were made for his benefit. He can only make his identity as a settler by making the land produce, and produce excessively, because "civilization" is defined as production in excess of the "natural" world (i.e. in excess of the sustainable production already present in the Indigenous world). In order for excess production, he needs excess labor, which he cannot provide himself. The chattel slave serves as that excess labor, labor that can never be paid because payment would have to be in the form of property (land). The settler's wealth is land, or a fungible version of it, and so payment for labor is impossible.6 The settler positions himself as both superior and normal; the settler is natural, whereas the Indigenous inhabitant and the chattel slave are unnatural, even supernatural. Settlers are not immigrants. Immigrants are beholden to the Indigenous laws and epistemologies of the lands they migrate to. Settlers become the law, supplanting Indigenous laws and epistemologies. Therefore, settler nations are not immigrant nations (See also A.J. Barker, 2009). Not unique, the United States, as a settler colonial nation-state, also operates as an empire - utilizing external forms and internal forms of colonization simultaneous to the settler colonial project. This means, and this is perplexing to some, that dispossessed people are brought onto seized Indigenous land through other colonial projects. Other colonial projects include enslavement, as discussed, but also military recruitment, low-wage and high-wage labor recruitment (such as agricultural workers and overseas-trained engineers), and displacement/migration (such as the coerced immigration from nations torn by U.S. wars or devastated by U.S. economic policy). In this set of settler colonial relations, colonial subjects who are displaced by external colonialism, as well as racialized and minoritized by internal colonialism, still occupy and settle stolen Indigenous land. Settlers are diverse, not just of white European descent, and include people of color, even from other colonial contexts. This tightly wound set of conditions and racialized, globalized relations exponentially complicates what is meant by decolonization, and by solidarity, against settler colonial forces. Decolonization in exploitative colonial situations could involve the seizing of imperial wealth by the postcolonial subject. In settler colonial situations, seizing imperial wealth is inextricably tied to settlement and re-invasion. Likewise, the promise of integration and civil rights is predicated on securing a share of a settler-appropriated wealth (as well as expropriated ‘third-world’ wealth). Decolonization in a settler context is fraught because empire, settlement, and internal colony have no spatial separation. Each of these features of settler colonialism in the US context - empire, settlement, and internal colony - make it a site of contradictory decolonial desires7 . Decolonization as metaphor allows people to equivocate these contradictory decolonial desires because it turns decolonization into an empty signifier to be filled by any track towards liberation. In reality, the tracks walk all over land/people in settler contexts. Though the details are not fixed or agreed upon, in our view, decolonization in the settler colonial context must involve the repatriation of land simultaneous to the recognition of how land and relations to land have always already been differently understood and enacted; that is, all of the land, and not just symbolically. This is precisely why decolonization is necessarily unsettling, especially across lines of solidarity. “Decolonization never takes place unnoticed” (Fanon, 1963, p. 36). Settler colonialism and its decolonization implicates and unsettles everyone.

#### The 1AC is embedded within an critical astropolitics of empire – the desire to command, control, and cooperate over the unique processes of space represent an attempt to make the cosmos into a geopolitical chess game used to project western sovereignty

Havercroft and Duvall 9 (Jonathan Havercroft and Raymond Duvall; 2009; *“Critical astropolitics The geopolitics of space control and the transformation of state sovereignty”*; accessed 12/13/21; <https://www.law.upenn.edu/live/files/7892-havercroft-and-duvallcritical-astropoliticspdf>; Jonathan Havercroft is an Associate Professor in the Department of Politics and International Relations at the University of Southampton. He teaches in the areas of political theory and international relations. He is the editor of the journal Global Constitutionalism; Raymond Duvall is a Professor of Political Science at the University of Minnesota; pages 44-50) HB

Astropolitics: realist and liberal strands Realism and astropolitik Everett Dolman3 draws on the writings of Mackinder and Mahan as inspiration for his development of a theory, which he titles Astropolitik. By the term, astropolitik, Dolman means “the application of the prominent and refined realist vision of state competition into outer space policy, particularly the development and evolution of a legal and political regime for humanity’s entry into the cosmos” (Dolman 2002a: 1). While Mahan focused on the structure of the ocean to develop his theories, and Mackinder focused on the topography of land, Dolman turns his attention toward the cartography of outer space. Whereas, at first glance, space may appear to be a “featureless void,” Dolman argues that it “is in fact a rich vista of gravitational mountains and valleys, oceans and rivers of resources and energy alternately dispersed and concentrated, broadly strewn danger zones of deadly radiation, and precisely placed peculiarities of astrodynamics” (Dolman 2002a: 61). In a manner similar to Mahan’s focus on natural sea lanes and “choke points” and Mackinder’s emphasis of geographic regions, Dolman emphasizes orbits, regions of space, and launch points as geopolitically vital assets over which states can be expected competitively and strategically to struggle for control. Orbital paths are important because stable orbits require virtually no fuel expenditure for satellites, whereas unstable orbits make it impossible for satellites to remain in space for a long time. Furthermore, different types of orbits pass over different parts of the earth at different frequencies. As such, the mission of a spacecraft determines in large part which orbit is most useful for it. There are essentially four types of orbits: low-altitude (between 150 km and 800 km above the Earth’s surface); medium-altitude (ranging from 800 km–35,000 km); high-altitude (above 35,000 km); and highly elliptical (with a perigee of 250 km and an apogee of 700,000 km) (Dolman 2002a: 65–7). In addition to pointing to the division of space into orbital planes, Dolman also identifies four key regions of space: 1 Terra, which includes the Earth and its atmosphere up until “just below the lowest altitude capable of supporting unpowered orbit” (Dolman 2002: 69); 2 Earth Space, which covers the region from the lowest possible orbit through to geo-stationary orbit; 3 Lunar Space, which extends from geo-stationary orbit to the Moon’s orbit; and 4 Solar Space, which “consists of everything in the solar system . . . beyond the orbit of the moon” (Dolman 2002a: 70). For Dolman, Earth Space is the astropolitical equivalent of Mackinder’s Outer Crescent, because controlling it will permit a state to limit strategic opportunities of potential rivals and at the same time allow the projection of force for indirect control (i.e. without occupation) of extensive territory of vital strategic importance, in this case (unlike Mackinder’s) potentially the entire Earth. “Control of Earth Space not only guarantees long-term control of the outer reaches of space, it provides a near-term advantage on the terrestrial battlefield” (Dolman 1999: 93). On the basis of these principles, Dolman develops an “Astropolitik policy for the United States” (Dolman 1999: 156), which calls on the U.S. government to control Earth Space. In the current historical–political juncture, no state controls this region. However, rather than leave it as a neutral zone or global commons, Dolman calls for the U.S. to seize control of this geo-strategically vital asset. According to Dolman’s reasoning, the neutrality of Earth Space is as much a threat to U.S. security as the neutrality of Melos was to Athenian hegemony. To leave space a neutral sanctuary could be interpreted as a sign of weakness that potential rivals might exploit. As such, it is better for the U.S. to occupy Earth Space now. Dolman’s astropolitik policy has three steps. The first involves the U.S. withdrawing from the current space regime on the grounds that its prohibitions on commercial and military exploitation of outer space prevent the full exploitation of space resources. In place of the global commons approach that informs that regime, Dolman calls for the establishment of “a principle of free-market sovereignty in space” (Dolman 2002a: 157), whereby states could establish territorial claims over areas they wish to exploit for commercial purposes. This space rush should be coupled with “propaganda touting the prospects of a new golden age of space exploration” (Dolman 2002a: 157). Step two calls for the U.S. to seize control of low-Earth orbit, where “space-based laser or kinetic energy weapons could prevent any other state from deploying assets there, and could most effectively engage and destroy terrestrial enemy ASAT facilities” (Dolman 2002a: 157). Other states would be permitted “to enter space freely for the purpose of engaging in commerce” (Dolman 2002a: 157). The final step would be the establishment of “a national space coordination agency ... to define, separate and coordinate the efforts of commercial, civilian and military space projects” (Dolman 2002a: 157). Within Dolman’s theory of astropolitik is a will-to-space-based-hegemony fuelled by a series of assumptions, of which we would point to three as especially important. First, it rests on a strong preference for competition over collaboration in both the economic and military spheres. Dolman, like a good realist, is suspicious of the possibilities for sustained political and economic cooperation, and assumes instead that competition for power is the law of international political–economic life. He believes, though, that through a fully implemented astropolitical policy “states will employ competition productively, harnessing natural incentives for self-interested gain to a mutually beneficial future, a competition based on the fair and legal commercial exploitation of space” (Dolman 2002a: 4). Thus, underpinning his preference for competition is both a liberal assumption that competitive markets are efficient at producing mutual gain through innovative technologies, and the realist assumption that inter-state competition for power is inescapable in world politics. As we will note more fully below, this conjunction of liberal and realist assumptions is a hallmark of the logic of empire as distinct from the logic of a system of sovereign states. The second and most explicit of Dolman’s key assumptions is the belief that the U.S. should pursue control of orbital space because its hegemony would be largely benign. The presumed benevolence of the U.S. rests, for Dolman, on its responsiveness to its people. If any one state should dominate space it ought to be one with a constitutive political principle that government should be responsible and responsive to its people, tolerant and accepting of their views, and willing to extend legal and political equality to all. In other words, the United States should seize control of outer space and become the shepherd (or perhaps watchdog) for all who would venture there, for if any one state must do so, it is the most likely to establish a benign hegemony. (Dolman 2002a: 157) However, even if the U.S. government is popularly responsive in its foreign policy – a debatable proposition – the implication of Dolman’s astropolitik is that the U.S. would exercise benign control over orbital space, and, from that position, potentially all territory on Earth and hence all people, by being responsible to its 300 million citizens. As such, this benign hegemony would in effect be an apartheid regime where 95 percent of the world would be excluded from participating in the decision-making of the hegemonic power that controls conditions of their existence. This, too, is a hallmark of empire, not of a competitive system of sovereign states. Third, Dolman’s astropolitik treats space as a resource to be mastered and exploited by humans, a Terra Nulius, or empty territory, to be colonized and reinterpreted for the interests of the colonizer. This way of looking at space is similar to the totalizing gaze of earlier geopolitical theorists who viewed the whole world as an object to be dominated and controlled by European powers, who understood themselves to be beneficently, or, at worst, benignly, civilizing in their control of territories and populations (Ó Tuathail 1996: 24–35). This assumption, like the first two, thus also implicates a hallmark of the logic of empire, namely what Ó Tuathail (1996) calls the ‘geopolitical gaze’ (about which we have more to say below), which works comfortably in tandem with a self-understanding of benign hegemony. When these three assumptions are examined in conjunction, Dolman’s astropolitik reveals itself to be a blueprint for a U.S. empire that uses the capacities of space-based weapons to exercise hegemony over the Earth and to grant access to the economic resources of space only to U.S. (capitalist) interests and their allies. This version of astropolitics, which is precisely the strategic vision underlying the policy pronouncements of the National Security Space Management and Organization Commission (Commission 2001) – and subsequently President George W. Bush – with which we began this chapter, is a kind of spatial, or geopolitical, power within the context of U.S. imperial relations of planetary scope. Its ostensive realist foundations are muted, except as a rather extreme form of offensive realism, because the vision is not one of great power competition and strategic balancing, but rather one of imperial control through hegemony. As such, it brings into question the constitution of sovereignty, since empire and sovereignty are fundamentally opposed constitutive principles of the structure of the international system – the subjects of empire are not sovereign. Thus, if astropolitics is to be in the form of Dolman’s astropolitik (and current U.S. policy aspirations), the future of sovereignty is in question, despite his efforts to position the theory as an expression of the realist assumption of great power competition. In later sections of this chapter, we attempt to show what this bringing sovereignty into question is likely to mean, conceptually and in practice. Before turning to that principal concern, however, we consider an alternative geopolitical theory of astropolitics. Liberal-republican astropolitics Over the past twenty-five years, in a series of articles and recently a major book, Daniel Deudney has attempted to rework the tenets of geopolitics and apply them to the contemporary challenges raised by new weapons technologies – particularly nuclear and space weapons (Deudney 1983, 1985, 1995, 2000, 2002, 2007).4 While Deudney finds geopolitical theory of the late nineteenth century and early twentieth century theoretically unsophisticated and reductionist, he believes that geopolitical attention to material conditions, spatiality, change, and political processes could form the basis of a theoretically sophisticated contextual–materialist security theory of world politics. Deudney starts from a premise about space weaponization similar to the core of Dolman’s astropolitik, namely that if any state were able to achieve military control of space, it would hold potential mastery over the entire Earth. One preliminary conclusion, however, seems sound: effective control of space by one state would lead to planet-wide hegemony. Because space is at once so proximate and the planet’s high ground, one country able to control space and prevent the passage of other countries’ vehicles through it could effectively rule the planet. Even more than a monopoly of air or sea power, a monopoly of effective space power would be irresistible. (Deudney 1983: 17) Rather than developing the implications of this as a strategic opportunity for any one state (e.g. the U.S.), however, Deudney sees it as a collective problem to be kept in check through collaboration; his project is to avoid space-based hegemony through cooperation among states. In a series of articles on global security written in the 1980s – while Cold War tensions between the U.S. and the U.S.S.R. continued to frame much theoretical discussion in international relations – Deudney saw the space age as a double-edged sword in superpower relations. On the one side, space weaponization posed a risk that the superpowers would extend their conflict extra-terrestrially and devise new, deadlier technologies that would enhance the risk of exterminating all of humanity; on the other, according to Deudney, the space age had found productive opportunities for the superpowers to deal with their rivalries in stabilizing collaboration. He notes that the Sputnik mission, while in the popular understanding only an escalation of the Cold War, initially was the result of an internationally organized research program – the International Geophysical Year (Deudney 1985; though see Dolman 2002a: 106–107 for an alternate interpretation of these events as Cold War competition). Another example was President Eisenhower’s proposed “Atoms for Peace” project, which involved the great powers sharing nuclear technology with developing nations for energy purposes. Most famous was the collaboration between the Soviet Union and the U.S. during the 1970s on the rendezvous between an Apollo capsule and the Soyuz space station. Similar multinational collaborations continue to this day, with the most notable example being the International Space Station. In addition to promoting collaboration, according to Deudney, the space age has also enhanced the ability of space powers to monitor each other – through spy satellites – thereby increasing the likelihood that they abide by arms control treaties. Deudney believes that these types of collaboration and increased surveillance could be strengthened and deepened so that great powers could be persuaded over time to “forge missiles into spaceships” (Deudney 1985: 271). In the 1980s this led Deudney to develop a set of specific proposals for a peaceful space policy, including collaboration between space powers on manned missions to the Moon, asteroids, and Mars. The development of an International Satellite Monitoring Agency would make “space-based surveillance technology accessible to an international community” for monitoring ceasefires, crises, compliance with international arms control treaties, and the Earth’s environment (Deudney 1985: 291). These proposals are aimed at promoting collaboration on projects of great scientific and military significance for the individual states. Deudney’s expectation is that such cooperation would mitigate security dilemmas and promote greater ties between states that would co-bind their security without sacrificing their sovereignty. While Deudney has not been explicit about how his astropolitics of collaboration would alter world order, in his more theoretical writings he has elaborated the logic of a liberal-republican international system. In a 2002 article on geopolitics and international theory, he developed what he called a‘historical security materialist’ theory of geopolitics: “[I]n which changing forces of destruction (constituted by geography and technology) condition the viability of different modes of protection (understood as clusters of security practices) and their attendant ‘superstructures’ of political authority structures (anarchical, hierarchical, and federal-republican)” (Deudney 2002: 80). In that work, he identified four different eras in which distinct modes of destruction were predominant: Pre-modern; Early Modern; Global Industrial; and Planetary-Nuclear, as well as two modes of protection: real-statism, which is based on an internal monopoly of violence and external anarchy; and federal-republicanism, which is based on an internal division of powers and an external symmetrical binding of actors through institutions that reduces their autonomy in relation to one another. According to Deudney, in the Planetary-Nuclear age the federal-republican mode of protection is more viable because states “are able to more fully and systematically restrain violence” than under the power balancing practices of real-statist modes of protection (Deudney 2002: 97; see also Deudney 2007: 244–277 for an elaboration of this argument). Although Deudney has not extended his “historical security materialist” approach into explicitly theorizing space weapons, per se (dealt with only tangentially and implicitly in the last two chapters of his recent book), his proposals during the Cold War to foster institutional collaboration between space powers as a way of promoting peace can safely be understood as a form of the mutually binding practices that he associates with the federalrepublican mode of protection. In addition, one of the general conclusions that Deudney reaches about “historical security materialism” is that the more a security context is rich in the potential for violence, the better suited a federal-republican mode of protection is to avoid systemic breakdown. Therefore, it seems reasonable to conclude that within Deudney’s work is a nascent theory of how a federal-republican international system could limit conflict between space powers by binding them together in collaborative uses of space for exploratory and security uses. In this sense, Deudney can be read as the liberal-republican astropolitical counterpart to Everett Dolman.5 While Deudney’s astropolitical theorizations hold out the promise of a terrestrial pacification through space exploration it is interesting to note a significant aporia in his theory – empire as a possible mode of protection. While real-statist modes of protection have an internal hierarchical authority structure, they are based on assumptions of external-anarchy, which is to say a system of sovereign states. Conversely, the federal-republican model is based on a symmetrical binding of units, in a way that no single unit can come to dominate others and accordingly in which they preserve their sovereignty (Deudney 2000, 2002, 2007). In a third mode, to which Deudney gives only scant attention, the case of empire, the hegemony of a single unit is such that other units are bound to it in an asymmetrical pattern that locates sovereignty only in the hegemon, or imperial center. Successful empires, including the Roman, British, and American, permit local autonomy in areas that are not of the imperial power’s direct concern while demanding absolute obedience in areas that are of vital concern to it, particularly when it comes to issues of security.6 Deudney’s implicit astropolitical theory thus ignores structurally asymmetric relations – in effect he ignores power. It is as if in wanting to have the world avoid the possibility of a planetary hegemony at the heart of the premise with which he and Dolman began their respective analyses, he white-washes it by failing to acknowledge the profound asymmetries of aspirations and technological–financial–military capacities among states for control of orbital space. In the next two sections we respond to Deudney’s call for “historical security materialism” by focusing on the premise that he skirts but that Dolman emphasizes, that military control of space means (at least the possibility of) mastery of the Earth. Specifically we examine how a new mode of destruction – space weapons – is the ideal basis for the third mode of protection – empire – through its potential for substantial asymmetry. We argue that the power asymmetries of space weapons have very significant constitutive effects on sovereignty and international systemic anarchy, and underlie the constitution of a new, historically unprecedented, form of empire. Before turning to that central thesis, however, we will first sketch the general contours of a critical astropolitics, which builds on the foundational premise of Dolman and Deudney, but modifies their theories in light of the significant insights of critical theory, particularly with respect to constitutive power. We ask: what consequences of astropolitics can a critical approach illuminate that may be concealed by an astropolitics informed by either liberal-republican or realist assumptions? How can insights offered by the revival of geopolitics in the writings of Deudney and Dolman – particularly the call for a new security materialist mode of analysis – be used to supplement and refine critical international relations theory?

#### The aff’s managerial concerns over space debris is techno-nationalism – liberal governance over space as a “commons” is the exclusive domain of space-faring nations

Stroikos ‘16

[Dimitrios, University of York. 2016. “China, India in Space and the Orbit of International Society: Power, Status, and Order on the High Frontier.”] Pat

Moreover, it is necessary to briefly say something about how techno-nationalism as a primary institution interacts with some of the other institutions of international space society. First, in many ways, techno-nationalism is complimentary to sovereign statehood because sovereignty in space is largely embedded in cosmopolitan and solidarist conceptions. This is partly why highly visible space projects define spacefaring hierarchies. Second, and consequently, techno-nationalism is also closely linked to great power status and great power management in the sense that different space capabilities also confer different levels of status and responsibilities in the management of international order in space. Likewise, in relation to diplomacy, highly visible techno-nationalist space feats can also offer a seat at the table of diplomatic initiatives and negotiations. Seen in this light, ‘high-visibility’ projects, such as space programmes are part of ‘recognition games’, which states play in order to acquire the status of a great power (Suzuki, 2008). As Cunningham (2009: 74) notes, ‘to be a superpower, one must be a “spacefaring” nation’. The Space Market Arguably, the economic factor has been one of the most neglected issues in the English School literature. Discussing some of the shortcomings of Bull’s work, Miller (1990: 74) pointed out in 1990, ‘a basic criticism of Bull’s account of international society’ is ‘that it does not include a strong economic component’ dealing with rules regarding trade, navigation, and investment and the common interests that permeate the sphere of economic activities. Since then, some important work has been done to bring together the economic sector and the English School, especially in the context of globalisation (Buzan, 2004; Buzan, 2005; Hurrell, 2007: 194-215). However, the question of how to consider the economic sector within the English School remains rather underdeveloped. According to Buzan, one response is to treat capitalism as a master institution, but he prefers the use of the market as a more neutral term, which has the additional merit of encompassing other practices, such as trade (Buzan, 2004: 193-4, Buzan, 2014a: 136). Consequently, given the growing globalisation and commercialisation of space activities (OECD, 2014: 9-10), there are good reasons for considering the space market as an emerging primary institution of international space society. Significantly, in some ways, since the advent of the Space Age, the space market has followed a parallel trajectory to the market as a distinctive institution at the global level. In particular, although the market was a key primary institution of the Western global international society during much of the Cold War, it has emerged as a sort of a global institution in the post-Cold War era (Buzan, 2014a: 138). Likewise, the space market was initially confined to American-led space activities, beginning as a US government initiative with the Communications Satellite Act in 1962, which led to the creation of the International Telecommunications Satellite Consortium (Intelsat) in 1964 (Moltz, 2014: 94). However, during the early Cold War, commercial activities were largely limited to the field of satellite communications and even commercial transatlantic cooperation in space was determined to a large extent by political and strategic factors and technology transfer considerations (Krige, 2013b). Equally, the idea of the commercialisation of space remained contested not the least because of the opposition of the Soviet Union and communist China to the market in general. This began to change only in the 1980s, when a number of space players emerged, including Europe and Japan, that challenged the US leadership in the fields of satellite manufacturing, launching capability, and other commercial space services. It was also during this period that the Soviet Union and China became less reluctant to get involved with commercial space activities (Krige, 2013a: 16-7). But it was after the end of the Cold War that the globalisation and commercialisation of space activities gradually led to the emergence of a global space market, which points to its inclusion as a primary institution of the international space society. According to a recent report by the Space Foundation (2015: 2), the global space economy grew up by 9 percent in 2014, totalling $330 billion, with commercial space activities accounting for the 76 percent of the global space economy and direct-to-home television services accounting for more than three-quarters of the commercial space sector. Even in the launch field, which has been traditionally reserved to the state largely due to national security and cost considerations, US small private companies have emerged like Space Exploration Technologies Corporation, known as SpaceX, and XCOR Aerospace. As Newlove-Eriksson and Eriksson (2013) argue, the globalisation of space activities has been underpinned by the growing importance of private authority and transnational Public-Private Partnerships (PPPs) and the blurred distinction between the military and civilian uses of space. Therefore, it makes sense to think of the space market as an institution of international space society. Yet, a number of points are worth noting here as they help to highlight the possibilities and limits of this move. First, despite all the attention paid to the privatisation of space travel promoted by space entrepreneurs of the likes of Elon Musk (SpaceX), Jeff Bezos (Blue Origin), and Richard Branson (Virgin Galactic), the privatisation of space should not be overstated. Not only does the degree of privatisation vary across space services and products (Moltz, 2014: 102-12), but governments also remain central actors in the space industry as key sources of initial investment and as customers for several space products and services (Brennan and Vecchi, 2011: 18, OECD, 2014: 17). Second, while it is clear that the argument over whether to have the market or not ended with the collapse of the Soviet Union, the tension between economic nationalism and economic liberalism is far from over, as there are not many states fully open to the forces of the global economy and many states support a form of capitalism that is embedded in economic nationalism. This points to the contested nature of the market as a primary institution in the sense that for many states the challenge of how to relate to the global market and make it more effective remains (Buzan, 2014a: 138). As far as international space society is concerned, it is necessary to note that the contested nature of the space market as an institution is reflected in the continuing dialectics between techno-nationalism and techno-globalism. It is commonplace among scholars to argue that Japan and China are two key examples of states that privilege a techno-nationalist approach to technology and innovation, including space technology. But even the United States has not been immune to techno-nationalist impulses. As Weiss (2014) shows, the enduring lead in high technology that the United States still enjoys is largely explained by the creation of not a liberal, but a hybrid political economy, whereby the national security state is interwoven with the commercial sector. NASA, of course, has been a key institution of the national security state since the beginning of the Space Age. But this has also been manifested in its recent efforts to catalyse the development of a commercial space industry through inviting competitive innovation (Weiss, 2014: 119-20, 27-8). This leads to the third point to make about how to understand the relationship between techno-nationalism and the space market. Because of the enduring influence of the former, it is tempting to see techno-nationalism as containing the space market (at least for the time being). Clearly, at one level, the space market can be understood as complementary to techno-nationalism in the ever-globalising international space society. Yet, at another level, the space market as a solidarist institution is staged as opposed to techno-nationalism. This tension is compounded by the fact that, in many ways, techno-nationalism occupies the crucial place of national sovereignty and territoriality in the sector of space considering that sovereignty in international space society is largely understood in cosmopolitan terms. Fourth, in discussing the market as a primary institution, Beeson and Breslin (2014) suggest that it makes more sense to treat the ‘developmental state’ and ‘regional production structures’ as primary institutions in East Asia rather than focusing on the market. This is an important consideration that serves to highlight how the global political economy is underpinned by significant regional derivations. Following from this, although it is apparent that the space market is a key feature of the social structure of international space society, it is possible to say that there are significant regional derivations. Perhaps the best expression of this is the Chinese and Indian variants of postcolonial techno-nationalism that still shape how the two rising Asian space powers relate to the space market. In light of the above, for now, it seems that there is some sort of hierarchy between techno-nationalism and the space market with the former subsuming the latter, especially with regards to space programmes in a postcolonial context. Certainly, the integration of China and India into the global space economy has accelerated over the last decades, but, as we shall see, techno-nationalism is still prominent in the ways in which the two Asian space powers approach space technology. Moreover, the space market remains contested as an emerging institution due to the ambiguity embedded in space law regarding space activities carried on by private actors. This process is further complicated by the inherent dual-use nature of space technology and the blurring of the distinction between the private and public realms (Newlove-Eriksson and Eriksson 2013). Environmental Stewardship There is now a burgeoning literature that deals with the relationship between international society and global environmentalism and assesses the extent to which environmental stewardship can be seen as a nascent institution of international society. Recent efforts to find ways to mitigate space debris as well as to create a normative framework for the sustainability of space are illustrative of how environmental stewardship is gradually becoming an institution in space. For example, in 2007, COPUOS adopted the ‘Space Debris Mitigation Guidelines’, which were wrought by the international Inter-Agency Debris Coordination Committee (IADC), consisting of experts from thirteen space agencies (United Nations Office for Outer Space Affairs, 2010). Moreover, as discussed earlier, in 2010, COPUOS formed the Working Group on the Long-term Sustainability of Outer Space Activities. Notably, the European Union proposal for a Code of Conduct for Outer Space also includes provisions on space debris control and mitigation (Council of the European Union, 2008: 9; Dickow, 2009: 159). Thus, there are grounds for considering environmental stewardship as an emerging institution of international space society. Indeed, the growing number of governments, private firms, and non-state actors that emphasise the importance of the sustainable utilisation of space suggests that space sustainability has emerged as a key norm. However, what should be noted is that these developments reflect a more pragmatic approach to maintain the space environment sustainable for the effective use of space rather than an expression of cosmopolitan values. Consequently, in the subsequent chapters, rather than examining in detail the engagement of China and India with environmental stewardship as a nascent institution in space, the focus will be on the emerging norm of space sustainability as a key great power responsibility in managing international space order and the implications of this development for China and India as aspiring great powers. Concluding Remarks Although it is clear that there are a number of ways of understanding the international politics of space, it may be worth going beyond standard theoretical approaches to understand how order is maintained in space. Drawing on key English School concepts, this chapter suggests that it is possible to conceptualise space not merely as a system, but also as an international society with a distinct social structure. This exercise of concept development is important both analytically and hermeneutically, given the notion of an exclusive club of space-faring countries. The chapter developed this argument further by highlighting how the nature of outer space as a distinctive sectoral interstate society is manifested in the ways in which its primary institutions are differentiated from such institutions at the global level (space war, space law, cosmopolitan sovereignty, space diplomacy, balance of power, great power management, techno-nationalism, space market, and environmental stewardship) in a historical and comparative context. In doing so, the chapter helps to highlight the constitutive impact of these institutions on the norms that shape the behaviour of the space-faring states.

#### The alternative is a refusal of the affirmative – an engagement in the process of decentering settler subjectivities and injecting indigenous knowledge – in this project, refusal constitutes a multi-faceted method towards decolonization

Grande 18 (Sandy Grande; 2018; Routledge Publishing; *“Refusing the University,”* a chapter in the series of essays *“Toward What Justice?: Describing Diverse Dreams of Justice in Education”*; accessed 12/22/21; ask me for the pdf; Sandy Grande is associate professor and Chair of the Education Department at Connecticut College. Her research interfaces critical Indigenous theories with the concerns of education; 58-62) HB

Taking into account the power relations of both capitalism and white supremacy, Indigenous scholars posit refusal as a positive stance that is: less oriented around attaining an affirmative form of recognition… and more about critically revaluating, reconstructing and redeploying culture and tradition in ways that seek to prefigure… a radical alternative to the structural and psycho-affective facets of colonial domination. (Coulthard, 2007, p. 456) In this way, Indigenous refusal both negatively rejects the (false) promise of inclusion and other inducements of the settler state and positively asserts Indigenous sovereignty and peoplehood. In Mohawk Interruptus (2014), Audra Simpson theorizes refusal as distinct from resistance in that it does not take authority as a given. More specifically, at the heart of the text, she theorizes refusal at the “level of method and representation,” exposing the colonialist underpinnings of the “demand to know” as a settler logic. In response, she develops the notion of ethnographic refusal as a stance or space for Indigenous subjects to limit access to what is knowable and to being known, articulating how refusal works “in everyday encounters to enunciate repeatedly to ourselves and to outsiders that ‘this is who we are, this is who you are, these are my rights’” (Simpson, 2007, p. 73). Mignolo (2011) and Quijano (1991) similarly take up refusal in relation to knowledge formation, asserting Indigenous knowledge itself as a form of refusal; a space of epistemic disobedience that is “delinked” from Western, liberal, capitalist understandings of knowledge as production. Gómez-Barris (2012) theorizes the Mapuche hunger strikes as “an extreme bodily performance and political instantiation” of refusal, an act wherein their starving bodies upon the land literally enact what it means to live in a state of permanent war (p. 120). Understood as expressions of sovereignty, such acts of refusal threaten the settler state, carrying dire if not deadly consequences for Indigenous subjects. As noted by Ferguson (2015), “capitalist settler states prefer resistance” because it can be “negotiated or recognized,” but refusal “throws into doubt” the entire system and is therefore more dangerous. While within the university the consequences of academic refusal are much less dire, they still carry a risk. To refuse inclusion offends institutional authorities offering “the gift” of belonging, creating conditions of precarity for the refuser. For example, refusal to participate in the politics of respectability that characterizes institutional governance can result in social isolation, administrative retribution, and struggles with self-worth. Similarly, the refusal to comply with the normative structures of tenure and promotion (e.g., emphasizing quantity over quality; publishing in “mainstream” journals) can and does lead to increased marginalization, exploitation, and job loss.16 And, in a system where Indigenous scholars comprise less than 1% of the professorate, such consequences not only bear hardships for individuals but also whole communities. That said, academic “rewards” and inducements accessed through recognition-based politics can have even deeper consequences. As Jodi Byrd (2011) reminds us, the colonization of Indigenous lands, bodies, and minds will not be ended by “further inclusion or more participation” (Byrd, 2011, p. xxvi). The inspirational work of Black radical and Indigenous scholars compels thinking beyond the limits of academic recognition and about the generative spaces of refusal that not only reject settler logics but also foster possibilities of co-resistance. The prospect of coalition re-raises one of the initial animating questions of this chapter: What kinds of solidarities can be developed among peoples with a shared commitment to working beyond the imperatives of capital and the settler state? Clearly, despite the ubiquitous and often overly facile calls for solidarity, building effective coalitions is deeply challenging, even among insurgent scholars. Within this particular context, tensions between Indigenous sovereignty and decolonial projects and anti-racist, social justice projects, raise a series of suspicions: whether calls for Indigenous sovereignty somehow elide the a priori condition of blackness (the “unsovereign” subject),17 whether anti-racist struggles sufficiently account for Indigenous sovereignty as a land-based struggle elucidated outside regimes of property, and whether theorizations of settler colonialism sufficiently account for the forces and structures of white supremacy, racial slavery, and antiblackness. Rather than posit such tensions as terminally incommensurable, however, I want to suggest a parallel politics of dialectical co-resistance. When Black peoples can still be killed but not murdered; when Indians are still made to disappear; when (Indigenous) land and Black bodies are still destroyed and accumulated for settler profit; it is incumbent upon all those who claim a commitment to refusing the white supremacist, capitalist, settler state, to do the hard work of building “interconnected movements for decolonization” (Coulthard, 2014). The struggle is real. It is both material and psychological, both method and politics, and thus must necessarily straddle the both/and (as opposed to either/or) coordinates of revolutionary change. In terms of process, this means working simultaneously beyond resistance and through the enactment of refusal—as fugitive, abolitionist, and Indigenous, sovereign subjects. Within the context of the university, this means replacing calls for more inclusive and diverse, safe spaces within the university with the development of a network of sovereign, safe houses outside the university. Kelley reminds us of the long history of this struggle, recalling the Institute of the Black World at Atlanta University (1969), the Mississippi Freedom Schools, and the work of Black feminists Patricia Robinson, Donna Middleton, and Patricia Haden as inspirational models. As a contemporary model, he references Harney and Moten’s vision of the undercommons as a space of possibility: a fugitive space wherein the pursuit of knowledge is not perceived as a path toward upward mobility and material wealth but rather as a means toward eradicating oppression in all of its forms (Undercommoning Collective). The ultimate goal, according to Kelley (2016), is to create in the present a future that overthrows the logic of neoliberalism. Scholars within Native studies similarly build upon a long tradition of refusing the university, theorizing from and about sovereignty through land-based models of education. Whereas a fugitive flees and seeks to escape, the Indigenous stands ground or, as Deborah Bird points out, “to get in the way of settler colonization, all the native has to do is stay at home” (as cited in Wolfe, 2006, p. 388). The ultimate goal of Indigenous refusal is Indigenous resurgence; a struggle that includes but is not limited to the return of Indigenous land. Again, while the aims may be different (and in some sense competing), efforts toward the development of parallel projects of co-resistance are possible through vigilant and sustained engagement. The “common ground” here is not necessarily literal but rather conceptual, a corpus of shared ethics and analytics: anti-capitalist, feminist, anti-colonial. Rather than allies, we are accomplices—plotting the death but not murder of the settler university. Toward this end, I offer some additional strategies for refusing the university: First and foremost, we need to commit to collectivity—to staging a refusal of the individualist promise project of the settler state and its attendant institutions. This requires that we engage in a radical and ongoing reflexivity about who we are and how we situate ourselves in the world. This includes but is not limited to a refusal of the cycle of individualized inducements—particularly, the awards, appointments, and grants that require complicity or allegiance to institutions that continue to oppress and dispossess. It is also a call to refuse the perceived imperative to self-promote, to brand one’s work and body. This includes all the personal webpages, incessant Facebook updates, and Twitter feeds featuring our latest accomplishments, publications, grants, rewards, etc. etc. Just. Make. It. Stop. The journey is not about self—which means it is not about promotion and tenure—it is about the disruption and dismantling of those structures and processes that create hierarchies of individual worth and labor. Second, we must commit to reciprocity—the kind that is primarily about being answerable to those communities we claim as our own and those we claim to serve. It is about being answerable to each other and our work. One of the many things lost to the pressures of the publish-or-perish, quantity-over-quality neoliberal regime is the loss of good critique. We have come to confuse support with sycophantic praise and critical evaluation with personal injury. Through the ethic of reciprocity, we need to remind ourselves that accountability to the collective requires a commitment to engage, extend, trouble, speak back to, and intensify our words and deeds. Third, we need to commit to mutuality, which implies reciprocity but is ultimately more encompassing. It is about the development of social relations not contingent upon the imperatives of capital—that refuses exploitation at the same time as it radically asserts connection, particularly to land. Inherent to a land-based ethic is a commitment to slowness and to the arc of inter-generational resurgence and transformation. One of the many ways that the academy recapitulates colonial logics is through the overvaluing of fast, new, young, and individualist voices and the undervaluing of slow, elder, and collective ones. And in such a system, relations and paradigms of connection, mutuality, and collectivity are inevitably undermined. For Indigenous peoples, such begin and end with land, centering questions of what it means to be a good relative. Toward this end, I have been thinking a lot lately about the formation of a new scholarly collective, one that writes and researches under a nom de guerre—like the Black feminist scholars and activists who wrote under and through the Combahee River Collective or the more recent collective of scholars and activists publishing as “the uncertain commons.”18 If furthering the aims of insurgence and resurgence (and not individual recognition) is what we hold paramount, then perhaps one of the most radical refusals we can authorize is to work together as one; to enact a kind of Zapatismo scholarship and a balaclava politics where the work of the collectivity is intentionally structured to obscure and transcend the single voice, body, and life. Together we could write in refusal of liberal, essentialist forms of identity politics, of individualist inducements, of capitalist imperatives, and other productivist logics of accumulation. This is what love as refusal looks like. It is the un-demand, the un-desire to be either of or in the university. It is the radical assertion to be on: land. Decolonial love is land.

#### The role of the ballot should be to center indigenous scholarship – any project of research should begin and end with placing the indigenous demands and resistance at it’s forefront. Our role as settlers specifically obligates us to center our politics in the context of ensuring accountability

Carlson 16 (Elizabeth Carlson; 10/21/16; Settler Colonial Studies; *“Anti-colonial methodologies and practices for settler colonial studies”*; accessed 12/28/21; ask me for the pdf; Elizabeth Carlson is an Assistant Professor at the School of Social Work at Laurentian University; pages 9-10) HB

Relational and epistemic accountability to Indigenous peoples Arlo Kempf says that ‘where anticolonialism is a tool used to invoke resistance for the colonized, it is a tool used to invoke accountability for the colonizer’. 42 Relational accountability should be a cornerstone of settler colonial studies. I believe settler colonial studies and scholars should ethically and overtly place themselves in relationship to the centuries of Indigenous oral, and later academic scholarship that conceptualizes and resists settler colonialism without necessarily using the term: SCT may be revelatory to many settler scholars, but Indigenous people have been speaking for a long time about colonial continuities based on their lived experiences. Some SCTs have sought to connect with these discussions and to foreground Indigenous resistance, survival and agency. Others, however, seem to use SCT as a pathway to explain the colonial encounter without engaging with Indigenous people and experiences – either on the grounds that this structural analysis already conceptually explains Indigenous experience, or because Indigenous resistance is rendered invisible.43 Ethical settler colonial theory (SCT) would recognize the foundational role Indigenous scholarship has in critiques of settler colonialism. It would acknowledge the limitations of settler scholars in articulating settler colonialism without dialogue with Indigenous peoples, and take as its norm making this dialogue evident. In my view, it is critical that we not view settler colonial studies as a new or unique field being established, which would enact a discovery narrative and contribute to Indigenous erasure, but rather take a longer and broader view. Indigenous oral and academic scholars are indeed the originators of this work. This space is not empty. Of course, powerful forces of socialization and discipline impact scholars in the academy. There is much pressure to claim unique space, to establish a name for ourselves, and to make academic discoveries. I am suggesting that settler colonial studies and anti-colonial scholars resist these hegemonic pressures and maintain a higher anti-colonial ethic. As has been argued, ‘the theory itself places ethical demands on us as settlers, including the demand that we actively refuse its potential to re-empower our own academic voices and to marginalize Indigenous resistance’. 44 As settler scholars, we can reposition our work relationally and contextually with humility and accountability. We can centre Indigenous resistance, knowledges, and scholarship in our work, and contextualize our work in Indigenous sovereignty. We can view oral Indigenous scholarship as legitimate scholarly sources. We can acknowledge explicitly and often the Indigenous traditions of resistance and scholarship that have taught us and provided the foundations for our work. If our work has no foundation of Indigenous scholarship and mentorship, I believe our contributions to settler colonial studies are even more deeply problematic.

## Case

### Framing

### Solvency

#### Deviating from whole resolution means the burden of solvency is on you – absent a method which the affirmative implements their advocacy you vote neg

#### Private actors solve space war and specifically ASAT restraint.

Cobb 21 [Wendy N. Whitman Cobb, Associate Professor of Strategy and Security Studies at the School of Advanced Air and Space Studies, “Privatizing Peace: How Commerce Can Reduce Conflict in Space,” 2021, Routledge, pp. 68-69, EA]

Finally, given the involvement of an ever-larger number of private actors in space, states also need to consider the lost opportunity costs if private actors choose to forego research, development, and deployment of new technologies because the danger in space is too high. As space becomes more commercialized, these private actors can exert pressure on states to behave peacefully in order to promote further economic development. Gartzke and Quan Li argue that this can happen through the movement of capital from conflict-prone states or areas to non-conflictual states.50 This is not necessarily applicable to space because there is no area in space which is formally protected, but commercial space actors may choose not to engage in new economic investment which can in turn affect a state’s economic performance. To date, the size of the space sector is comparatively small, so, arguably, the potential economic loss would not be that great. Where the harm comes from is state reliance on private actors for military and national security space services. As states contract out space services to a greater extent, private actors exert an even greater influence over the state by having a capability they do not.

Why might private companies want a more conflict-free space? If there is weaponized conflict in space, they could potentially benefit through new launches to send up replacement satellites; this is similar to an argument that war can actually be beneficial to an economy because companies are needed to create materiel and weapons.51 But, in a debris filled environment, sending replacements is more difficult and dangerous. Some private companies want to engage in human spaceflight; a conflictual or more dangerous orbital environment would likely prevent those activities or increase their costs to such an extent that it becomes economically infeasible. James Clay Moltz argues specifically that “the growing presence of space tourists in low-Earth orbit would greatly increase the incentives for restraint in any future [ASAT] test programs.”52 Those foregone development costs and commercial activities can have a similar cost to states simply by discouraging private actors from participating in the market.

### Debris

#### Kessler Syndrome false – less debris and existing guidelines solve

Lewis 15 (Hugh, Senior Lecturer in Aerospace Engineering at the University of Southampton, “Space debris, Kessler Syndrome, and the unreasonable expectation of certainty.” Room, <https://room.eu.com/article/Space_debris_Kessler_Syndrome_and_the_unreasonable_expectation_of_certainty>, Accessed 8/10/19, JMoore)

There is now widespread awareness of the space debris problem amongst policymakers, scientists, engineers and the public. Thanks to pivotal work by J.C. Liou and Nicholas Johnson in 2006 we now understand that the continued growth of the debris population is likely in the future even if all launch activity is halted. The reason for this sustained growth, and for the concern of many satellite operators who are forced to act to protect their assets, are collisions that are expected to occur between objects – satellites and rocket stages – already in orbit. In spite of several commentators warning that these collisions are just the start of a collision cascade that will render access to low Earth orbit all but impossible – a process commonly referred to as the ‘Kessler Syndrome’ after the debris scientist Donald Kessler – the reality is not likely to be on the scale of these predictions or the events depicted in the film Gravity. Indeed, results presented by the Inter-Agency Space Debris Coordination Committee (IADC) at the Sixth European Conference on Space Debris show an expected increase in the debris population of only 30% after 200 years with continued launch activity. Collisions are still predicted to occur, but this is far from the catastrophic scenario feared by some. Constraining the population increase to a modest level can be achieved, the IADC suggested, through widespread and good compliance with existing space debris mitigation guidelines, especially those relating to passivation (whereby all sources of stored energy on a satellite are depleted at the end of its mission) and post-mission disposal, such as de-orbiting the satellite or re-orbiting it to a graveyard orbit. Nevertheless, the anticipated growth of the debris population in spite of these robust efforts merits the investigation of additional measures to address the debris threat, according to the IADC.

#### The space junk has been put there by PUBLIC entities like governments as well as private entities, even a ban on private entities in space couldn’t solve the problem. As long as anyone is launching anything it is inevitable

**Polyakov 21**, Dr. Max Polyakov, Founder, Noosphere Ventures, Firefly Aerospace, EOS Data Analytics, 5-5-2021, "Where does space junk come from – and how do we clean it up?," World Economic Forum,<https://www.weforum.org/agenda/2021/05/why-we-need-to-clean-up-space-junk-debris-low-earth-orbit-pollution-satellite-rocket-noosphere-firefly/> Livingston RB

Where does space junk come from? **As long as humans launch objects into orbit, space debris is inevitable.** Rocket launches leave boosters, fairings, interstages, and other debris in LEO. So do rocket explosions, which currently account for seven of the top 10 debris-creating events. **Human presence also creates orbital flotsam** – such as cameras, pliers, an astronaut’s glove, a wrench, a spatula, even a tool bag lost during space walks. Some debris is created naturally from the impacts of micrometeoroids – dust-sized fragments of asteroids and comets. With limited lifetimes, **operational satellites can become space debris**. Satellites run out of maneuvering fuel, batteries wear out, solar panels degrade – causing an orbital debris feedback loop, in which the problem is exacerbated when solar panels are sandblasted by micrometeoroids and tiny debris. As with rocket debris, spent satellites eventually re-enter Earth’s atmosphere and burn up, but the process can take years – and the higher they orbit above Earth, the longer those orbits take to decay.

#### Risk is low – sat designs and cleanup checks.

O’Gorman 18 (John, MA thesis submitted to Rochester Institute of Technology, “The Cost of Clean Space- A Study of the Additional Fuel Costs of Launching Above Low Earth Orbit,” 5-18, <https://pdfs.semanticscholar.org/d703/101d657334d2e1575d08005e290578770cd1.pdf?_ga=2.70400848.1753078645.1567896134-909185996.1567896134>)

To conclude, orbital debris is a current issue and has the potential to be a serious problem in the coming decades and centuries if business as usual is conducted. Fortunately, steps are being taken now which can mitigate this disastrous scenario. The space community is still relatively small and better rocket and satellite design is helping to avoid the accidental creation of debris. Studies over the feasibility of pulling large objects from orbit have already been done and they show a large amount of promise for managing the future creation of debris very effectively. Although current international policies managing debris do not yet exist, the discussion over how space will be managed is already well underway. If sound debris policies can come out of these discussions, the utility of LEO can be preserved for future generations.

#### Global ADR development already exists – solves.

Zachary Keck, Wohlstetter Public Affairs Fellow at the Nonproliferation Policy Education Center, 6-17-2018, "Space Is Truly the Final Frontier (For the Next Great War)," National Interest, https://nationalinterest.org/blog/the-buzz/space-truly-the-final-frontier-the-next-great-war-26284

The first type of dual-use spacecraft—called active debris removal (ADR)—are designed to deal with the rapidly growing problem of space debris. One preliminary ADR example came from China in June 2016 when it launched the "Aolong-1" spacecraft, which was a demonstrator device. These ADR spacecraft—which are also being developed by the United States, European Union, and Russia— can retrieve debris floating in space. Then, the ADR spacecraft bring the debris down to re-enter the atmosphere, destroying it by the intense frictional heat. Alternatively, they can also instead place the debris in graveyard orbits to reduce the probability of colliding with operational satellites. ADR spacecraft are unavoidable given the growing nature of the space debris problem. Previous estimates have suggested that starting in 2020 the world would need to remove an average of five massive objects (such as decommissioned satellites and derelict rockets) from low earth orbit (LEO) each year to deal with the problem. Others have estimated that the number is closer to ten that will need removal. However, as Chow points out, these estimates fail to consider the massive expansion in the number of LEO satellites entering space. As of August 31, 2017, only 1,071 LEO satellites were orbiting the earth. Over the next decade, however, between 14,000 and 16,000 additional LEOs are expected to be launched. This makes the space debris problem more difficult, and debris removal spacecraft that much more important. The problem is that the same spacecraft that can remove debris can also be used as “space stalkers.” Space stalkers, as Chow previously described them, "could be placed on orbit in peacetime and maneuvered to tailgate U.S. satellites during a crisis. At a moment's notice, they could simultaneously attack multiple critical satellites from such close proximity that the United States would not have time to prevent damage." Since ADR spacecraft are designed to get close to and remove debris, they necessarily have the capability to get close to and snatch essential satellites that U.S. military relies on. Additionally, ADR spacecraft are not the only dual-use problem. Many of the same countries developing ADR capabilities are also building maintenance spacecraft. These spacecraft—called on-orbit servicing (OOS)—also maneuver themselves to be in physical contact with satellites to perform any number of maintenance tasks. These tasks include, "high-resolution inspection; correction of some types of mechanical anomalies, such as solar array and antenna deployment malfunctions; relocation and other orbital maneuvers; installation of attachable payloads to enable upgrades or new capabilities; and refueling to extend the service life of satellites." Once again, the issue is that these OOS spacecraft can be quickly repurposed to take out critical satellites during a crisis or conflict. In fact, these OOS spacecraft are even better space stalkers than ADR ones because they have more advanced rendezvous and robotic capabilities. This is not some distant problem. Chow notes that the first ADR and OOS spacecraft are likely to become operational sometime in the early part of the next decade. “In effect,” he writes, “weaponization of space will happen by default in the early 2020s and beyond and will be unavoidable and irreversible.” It will only grow worse with time as more countries launch ADR and OOS spacecraft and their capabilities for rendezvous and proximity operations improve.

#### Too much debris exists in space now – that destroys satellites

**Wall 21** [Mike Wall, Michael Wall is a Senior Space Writer with [Space.com](http://space.com/) and joined the team in 2010. He primarily covers exoplanets, spaceflight and military space. He has a Ph.D. in evolutionary biology from the University of Sydney, Australia, a bachelor's degree from the University of Arizona, and a graduate certificate in science writing from the University of California, Santa Cruz. 11/15/21, "Kessler Syndrome and the space debris problem," Space, [https://www.space.com/kessler-syndrome-space-debris accessed 12/10/21](https://www.space.com/kessler-syndrome-space-debris%20accessed%2012/10/21)] Adam

Earth orbit is getting more and more crowded as the years go by. Humanity has launched about 12,170 satellites since the dawn of the space age in 1957, [according to the European Space Agency](https://www.esa.int/Safety_Security/Space_Debris/Space_debris_by_the_numbers) (ESA), and 7,630 of them remain in orbit today — but only about 4,700 are still operational. That means there are nearly 3,000 defunct spacecraft zooming around Earth at tremendous speeds, along with other big, dangerous pieces of debris like upper-stage rocket bodies. For example, orbital velocity at 250 miles (400 kilometers) up, the altitude at which the ISS flies, is about 17,100 mph (27,500 kph). At such speeds, even a tiny shard of debris can do serious damage to a spacecraft — and there are huge numbers of such fragmentary bullets zipping around our planet. ESA estimates that Earth orbit harbors at least 36,500 debris objects that are more than 4 inches (10 centimeters) wide, 1 million between 0.4 inches and 4 inches (1 to 10 cm) across, and a staggering 330 million that are smaller than 0.4 inches (1 cm) but bigger than 0.04 inches (1 millimeter). These objects pose more than just a hypothetical threat. From 1999 to May 2021, for example, the ISS conducted 29 debris-avoiding maneuvers, including three in 2020 alone, [according to NASA officials](https://www.nasa.gov/mission_pages/station/news/orbital_debris.html). And that number continues to grow; the station performed [another such move in November 2021](https://www.space.com/space-station-dodging-chinese-space-junk-spacex-crew-3), for example. Many of the smaller pieces of space junk were spawned by the explosion of spent rocket bodies in orbit, but others were more actively emplaced. In January 2007, for instance, China intentionally destroyed one of its defunct weather satellites in a much-criticized test of anti-satellite technology that generated [more than 3,000 tracked debris objects](https://swfound.org/media/9550/chinese_asat_fact_sheet_updated_2012.pdf) and perhaps 32,000 others too small to be detected. The vast majority of that junk remains in orbit today, experts say. Spacecraft have also collided with each other on orbit. The most famous such incident occurred in February 2009, when Russia's defunct Kosmos 2251 satellite slammed into the operational communications craft Iridium 33, producing [nearly 2,000 pieces of debris](https://swfound.org/media/6575/swf_iridium_cosmos_collision_fact_sheet_updated_2012.pdf) bigger than a softball. That 2009 smashup might be evidence that the Kessler Syndrome is already upon us, though a cataclysm of "Gravity" proportions is still a long way off. "The cascade process can be more accurately thought of as continuous and as already started, where each collision or explosion in orbit slowly results in an increase in the frequency of future collisions," [Kessler told Space Safety Magazine in 2012](http://www.spacesafetymagazine.com/space-debris/kessler-syndrome/don-kessler-envisat-kessler-syndrome/).

### Climate

#### The internal link between their Delbert ev and their Voosen ev is nonexistent – Delbert indicates only damage done to the ozone not rising to existential threat

#### Impact Scenario Non-Unique – non-commercial rocket launches, power plants, and car pollution contribute more CO2 so they don’t solve climate

#### Your warming impact has no statistics and is outdated – prefer my recent statistical analysis

#### No Extinction from Warming – new studies prove over-hype and tech solves.

* Extinction Tipping Point is implausible – we’re on track for 3 degrees, not 4-5 degrees
* Tech and Energy Modernization Solve – Renewable Energy is replacing Fossil Fuels which reduces Climate Mortality by a rate of 5.

Nordhaus 20 Ted Nordhaus 1-23-2020 “Ignore the Fake Climate Debate” <https://www.wsj.com/articles/ignore-the-fake-climate-debate-11579795816>, found by BPS, (American author, environmental policy expert, and the director of research at The Breakthrough Institute, citing new climate change forecasts)//Re-cut by Elmer

Beyond the headlines and social media, where Greta Thunberg, Donald Trump and the online armies of climate “alarmists” and “deniers” do battle, there is a real climate debate bubbling along in scientific journals, conferences and, occasionally, even in the halls of Congress. It gets a lot less attention than the boisterous and fake debate that dominates our public discourse, but it is much more relevant to how the world might actually address the problem. In the real climate debate, no one denies the relationship between human emissions of greenhouse gases and a warming climate. Instead, the disagreement comes down to different views of climate risk in the face of multiple, cascading uncertainties. On one side of the debate are optimists, who believe that, with improving technology and greater affluence, our societies will prove quite adaptable to a changing climate. On the other side are pessimists, who are more concerned about the risks associated with rapid, large-scale and poorly understood transformations of the climate system. But most pessimists do not believe that runaway climate change or a hothouse earth are plausible scenarios, much less that human extinction is imminent. And most optimists recognize a need for policies to address climate change, even if they don’t support the radical measures that Ms. Thunberg and others have demanded. In the fake climate debate, both sides agree that economic growth and reduced emissions vary inversely; it’s a zero-sum game. In the real debate, the relationship is much more complicated. Long-term economic growth is associated with both rising per capita energy consumption and slower population growth. For this reason, as the world continues to get richer, higher per capita energy consumption is likely to be offset by a lower population. A richer world will also likely be more technologically advanced, which means that energy consumption should be less carbon-intensive than it would be in a poorer, less technologically advanced future. In fact, a number of the high-emissions scenarios produced by the United Nations Intergovernmental Panel on Climate Change involve futures in which the world is relatively poor and populous and less technologically advanced. Affluent, developed societies are also much better equipped to respond to climate extremes and natural disasters. That’s why natural disasters kill and displace many more people in poor societies than in rich ones. It’s not just seawalls and flood channels that make us resilient; it’s air conditioning and refrigeration, modern transportation and communications networks, early warning systems, first responders and public health bureaucracies. New research published in the journal Global Environmental Change finds that global economic growth over the last decade has reduced climate mortality by a factor of five, with the **greatest benefits documented in the poorest nations.** In low-lying Bangladesh, 300,000 people died in Cyclone Bhola in 1970, when 80% of the population lived in extreme poverty. In 2019, with less than 20% of the population living in extreme poverty, Cyclone Fani killed just five people. “Poor nations are most vulnerable to a changing climate. The fastest way to reduce that vulnerability is through economic development.” So while it is true that poor nations are most vulnerable to a changing climate, it is also true that the fastest way to reduce that vulnerability is through economic development, which requires infrastructure and industrialization. Those activities, in turn, require cement, steel, process heat and chemical inputs, all of which are impossible to produce today without fossil fuels. For this and other reasons, the world is unlikely to cut emissions fast enough to stabilize global temperatures at less than 2 degrees above pre-industrial levels, the long-standing international target, much less 1.5 degrees, as many activists now demand. But recent forecasts also suggest that many of the worst-case climate scenarios produced in the last decade, which assumed unbounded economic growth and fossil-fuel development, are also very unlikely. There is still substantial uncertainty about how sensitive global temperatures will be to higher emissions over the long-term. But the best estimates now suggest that the world is on track for 3 degrees of warming by the end of this century, not 4 or 5 degrees as was once feared. That is due in part to slower economic growth in the wake of the global financial crisis, but also to decades of technology policy and energy-modernization efforts. “We have better and cleaner technologies available today because policy-makers in the U.S. and elsewhere set out to develop those technologies.” The energy intensity of the global economy continues to fall. Lower-carbon natural gas **has** displaced coal **as the primary source of new fossil energy**. The falling cost of wind and solar energy has begun to have an effect on the growth of fossil fuels. Even nuclear energy has made a modest comeback in Asia.

### Aliens

#### Aliens don’t exist, shock

**Al-Khalili 18** --- professor of physics and professor of the public engagement in science at the University of Surrey, (Jim Al-Khalili, 6-27-2018, "Aliens may not exist – but that’s good news for our survival," Guardian, https://www.theguardian.com/commentisfree/2018/jun/27/aliens-exist-survival-universe-jim-alkhalili, accessed 1-12-2019)

In 1950 Enrico Fermi, an Italian-born American Nobel prize-winning physicist, posed a very simple question with profound implications for one of the most important scientific puzzles: whether or not life exists beyond Earth. The story goes that during a lunchtime chat with colleagues at the Los Alamos National Laboratory in New Mexico, the issue of flying saucers came up. The conversation was lighthearted, and it doesn’t appear that any of the scientists at that particular gathering believed in aliens. But Fermi merely wanted to know: “Where is everybody?” The most likely cradles for life inside our solar system Read more His point was that, since the age of the universe is so great and its size so vast, with hundreds of billions of stars in the Milky Way alone, then unless the Earth is astonishingly special, the universe should be teeming with life. This might include intelligent species advanced enough to have the knowledge and technology necessary for space travel. They ought to have colonised the entire galaxy by now. So where are they all? More recently, the late Stephen Hawking argued along similar lines. He said, “To my mathematical brain, the numbers alone make thinking about aliens perfectly rational.” Hawking was articulating the same popular argument as Fermi – that the sheer vastness of the universe all but guarantees we have company. In recent years, scientists have begun to take the subject more seriously again. One of the most exciting areas of research in astronomy has been the discovery of extra-solar planets, worlds orbiting stars other than our sun. Many of them even appear to be Earth-like in size and climate. Astronomers now believe there are billions of these other worlds, many of which will have conditions suitable for life. The probability of life, maybe even intelligent life, existing on at least one of them must surely, therefore, be overwhelming. Now however, scientists at the wonderfully named Future of Humanity Institute in Oxford have poured cold water on Hawking’s and others’ optimism. They have carried out a thoughtful statistical analysis by dissecting a mathematical relation known as the Drake equation, which allows us to calculate the probability of extraterrestrial life based on the combined probabilities of all the ingredients for life being in place. Let me make clear at the outset that the Drake equation is not very scientific, for the sole reason that some of the factors that need to be fed into it are pure guesswork at this stage. Not the least of these is the big question: given all the things we believe are necessary for life (a source of energy, liquid water and organic molecules), how likely is it that life will emerge? Sign up for Lab Notes - the Guardian's weekly science update Read more The authors of the new study offer two insights, one pessimistic and the other more cheery. The first is that Fermi’s paradox is easy to resolve. The reason we have not had any messages from ET is because, well, there is no ET out there. They calculate the probability we are alone in the universe to be in the range of 39%–85% and the probability that we are alone in our own galaxy to be between 53% and 99.6%. Basically, don’t hold your breath. Biologists, of course, hate all this silly speculation. They quite rightly point out that we still do not properly understand how life originated here on Earth, so how can we possibly have any confidence in anticipating its existence or nonexistence elsewhere? There are some who argue that life on Earth appeared pretty quickly after the right conditions emerged almost 4bn years ago, which was when our planet had cooled sufficiently for liquid water to exist. Doesn’t that mean it could easily appear elsewhere too? Actually, no. A statistical sample of one tells us nothing. It is quite possible that biology is a freak local aberration, the product of a chemical fluke so improbable that it didn’t happen anywhere else in the observable universe. So where do we stand? Well, there are reasons to believe that we may have an answer in the coming decade or two, one way or the other. Astrobiologists are about to search exoplanets for the gases produced by microbial life using sophisticated next-generation space telescopes. There is also the possibility of finding microbial life closer to home, under the ice of several of the moons of Jupiter and Saturn. I did say that the study also provided some cheer. Some have claimed we have not found ET yet because intelligent life (including us) always annihilates itself before it can successfully develop the technology for interstellar travel or communication. But maybe the silence is simply because no such alien civilisations exist. So, as the authors put it, pessimism about our own future is therefore unfounded. We may be alone, but we may just survive.

#### Aliens don’t exist---new studies disprove

Redd, 18—Space.com contributor, citing Anders Sandberg, philosopher at the University of Oxford (Nolan Taylor, “Alien Life May Be Rare in Our Galaxy Today,” <https://www.space.com/41080-alien-life-may-be-rare-today.html>, dml)

The hunt for E.T. may have gotten more difficult. New research suggests that alien life may not be as widespread as we had hoped. When it comes to hunting for alien civilizations, a key question is how plentiful intelligent extraterrestrials are in the universe — but the answer to that question depends on a lot of knowledge scientists don't have yet. In 1960, Frank Drake, an astronomer and hunter of extraterrestrial intelligence, devised an equation to calculate the probability of hearing from an intelligent, communicating alien civilization. The Drake equation relies on the values of several constants to determine how widespread such civilizations might be, how likely they are to evolve and how likely they are to have broadcast when we were able to detect. While some of the numbers, such as how many stars have planets around them, are fairly well-known, others, such as the fraction of those worlds with life, remain uncertain. [The Father of SETI: Q&A with Astronomer Frank Drake] Over the years, scientists have attempted to "solve" the Drake equation. But the uncertain quantities required estimation. Optimists tended to put in numbers that would reflect their thoughts — life on other planets is plentiful! Civilizations last for millions of years! Pessimists skew their results the other way, assuming life is rare and civilizations quickly burn out. Searching for a more accurate answer to the question 'Are we alone?' the new study's researchers have included the uncertainties of the numbers — how confident scientists are in them. Rather than giving each component a hard-and-fast amount, they attempted to gauge the strength of the research into these questions. "We can show that, given current scientific uncertainty, we get a distribution that could make both the optimists and pessimists happy at the same time: a fair chance of several alien civilizations, but also a fair chance of no aliens within the visible universe," Anders Sandberg told Space.com by email. Sandberg, a philosopher at the University of Oxford, is the lead author on the new research. "The uncertain sky should not be surprising given our level of uncertainty," Sandberg said. The study, which is available on the preprint site Arxiv, has been submitted to the journal Royal Society of London A. Alone in the universe? In 1950, Italian-American physicist Enrico Fermi looked to the skies and asked, "Where are they?" If the universe is filled with alien civilizations, why have none of them contacted Earth? The question, referred to as the Fermi paradox, provided the fuel for the Drake equation. The Drake equation has never sought a definite number. Instead, it has been used to make a rough estimate of the number of detectable civilizations in the Milky Way (N). According to the equation, N = RfpncflfifcL That number is based on the rate of star formation per year (R), the fraction of stars with planets (fp), the number of habitable planets per system of planets (nc), the fraction of those planets with life (fl), the fraction of life that is intelligent (fi), the fraction of intelligent civilizations that are detectable (fc), and the average lifetime of such civilizations in years (L). Observations of distant stars, with instruments such as NASA's Kepler telescope, have revealed that planets are plentiful around stars, and habitable worlds are spread across the galaxy. All the other variables remain up in the air. [The Most Intriguing Alien Planet Discoveries of 2017] Sandberg and his colleagues decided to change the inputs for the unknown parts of the equation. Rather than estimating a single number, they included the range. For instance, saying that there is a 1/100 chance for life to evolve doesn't make it clear whether the odds are exactly 1 out of 100, between 1/1000 and 1/10, or between one and one in a googol (10^100), Sandberg said. "One of the features that differs in [the new research] from previous Fermi paradox analyses is that the current authors tackle the problem of order-of-magnitude uncertainties in each component of Drake's equation in a less-biased, more robust way," Ian Jordan, an astronomer and engineer at the Space Telescope Science Institute in Baltimore, told Space.com in an email. Jordan is not part of the new research. By factoring in the scientific uncertainty for components like how often life evolves, the researchers determined that the odds that we are the only intelligent life in the Milky Way range between 53 and 99.6 percent. The odds get a bit better when they include the observable universe — the chance that humanity is alone ranges between 39 and 85 percent. The research was published on the journal preprint server arXiv. The new numbers mean there's a good chance humanity is the only detectable intelligent civilization around. Sandberg doesn't necessarily think that's a bad thing.

#### No aliens

**Forgan 19** [Duncan Forgan, researcher in the School of Physics & Astronomy at the University of St Andrews.] “Predator-Prey Behaviour in Self-Replicating Interstellar Probes” 2 March 2019 (<https://arxiv.org/abs/1903.00770>) – MZhu

Why have we detected no sign of intelligent life beyond the Earth? This fundamental question continues to challenge our deepest-held beliefs about humanity and our place in the Universe. Fermi’s Paradox forces us to confront our Copernican assumptions about our lack of uniqueness with the lack of extraterrestrial intelligences (ETIs, see e.g. Brin, 1983; Cirkovi ´ c, 2009). Its strongest formulation can be given as follows ´ (Tipler, 1980). Imagine a civilisation constructs an interstellar probe that is self-replicating. Such a probe would be able to produce a copy every time it visits a new star system. As each copy makes copies, the number of self-replicating probes (SRPs) grows exponentially, and every star in the Milky Way is explored on a timescale much, much shorter than its age. Estimates for this exploration timescale vary, but are as short as ten million years (Nicholson & Forgan, 2013), and perhaps shorter still. Given that this timescale is much shorter than the age of the Earth, and only one ETI constructing SRPs is sufficient to produce this scenario, on balance we should expect to see an interstellar probe orbiting the Sun. And yet, we do not. How can this be resolved? Among many possibilities, we can include solutions that require civilisations to be rare. However, as a single civilisation is sufficient to swamp the galaxy in SRPs, we are effectively asking for humanity to be alone in the Universe.