# HarWes R1 vs Marlborough KM

## 1

#### 1] Settler colonialism is the permeating structure of the nation-state which requires the elimination of indigenous life and land via the occupation of settlers. The appropriation of land turns Natives into ghosts and chattel slaves into excess labor.

Tuck and Yang 12 (Eve Tuck, Unangax, State University of New York at New Paltz K. Wayne Yang University of California, San Diego, Decolonization is not a metaphor, Decolonization: Indigeneity, Education & Society Vol. 1, No. 1, 2012, pp. 1-40, JKS)

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 overlap - 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 slaves, 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.

#### --] This debate is not private space good/bad, but instead a question of Native sovereignty and the power to invoke the plan. The 1AC eclipses the authority of Native nations, so in response we affirm the long tradition of Indigenous internationalism across colonial borders.

Estes 19

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The Treaty Council, however, was not the first or only version of what historian Daniel Cobb calls a “global Indigenous identity.” Rather, it belonged to and drew from a long tradition of Indigenous internationalism.5 Prior to European contact, Indigenous nations had often entered into relations with each other for alliance, kinship, war, peace, or trade. As shown in previous chapters, agreements were made not solely between human nations, but also among nonhuman nations as well, such as the buffalo and the land. Such treaties were, and continue to be, the basis of diplomacy and the evidence of a prior and continuing status of Indigenous nationhood. Sovereign nations do not enter into international relations or treaties with domestic or “internal” populations. On the contrary, the very basis of sovereignty is the power to negotiate relationships between those who are seen as different— between other sovereigns and nations. But concepts of “sovereignty” and “nation” possess different meanings for Indigenous peoples than for their European-derived counterparts. And they are not entirely consistent, either, with the aspirations for a nation-state that came to define decolonization movements in the Third World. While doing important defensive work, on face value these Western and Third World concepts only partially reflect traditions of Indigenous resistance. Far beyond the project of seeking equality within the colonial state, the tradition of radical Indigenous internationalism imagined a world altogether free of colonial hierarchies of race, class, and nation. This vision allowed revolutionary Indigenous organizations such as the Treaty Council to make relatives, so to speak, with those they saw as different, imagining themselves as part of Third World struggles and ideologies, and entirely renouncing the imperialism and exceptionalism of the First World (while still living in it). They were in the First World but not of it—much like American Indians are in, but not entirely of, the United States. Indigenous peoples across North America and the world have fought, died, and struggled to reclaim, restore, and redefine these powerful ideas. Their goal has been to take their proper place in the family of nations. Radical Indigenous internationalism, however, predates AIM and the Treaty Council. Contemporary pan-Indigenous movements were a result of more than a decade of Red Power organizing that began in the early 1960s, nearly a decade before the creation of AIM. Earlier, in the 1950s, Flathead scholar and writer D’Arcy McNickle and the National Congress of American Indians had explored a similar intellectual and political terrain of internationalism. And before that, the Society of American Indians advocated for a seat at the table during the 1919 Paris peace talks and representation at the League of Nations. Each distinct instance posed a similar question: If Indigenous peoples are nations, why are they not afforded the right to self-determination? Two strands of thinking about self-determination for the colonial world prevailed following the First World War. In the first, US President Woodrow Wilson argued for self-determination with a limited set of rights that would not radically upset the colonial order. Such liberal internationalism, however, glaringly omitted Indigenous peoples, as they understood themselves as nations that existed prior to the formation of settler states. Rarely were Wilson’s principles applied to North America or the United States; nor were they ever intended to extend to Indigenous peoples. A second, more radical vision put forward by Communist revolutionary V. I. Lenin argued for the right of colonized nations to secede and declare independence from their colonial masters. This view was echoed by the Third World decolonization movement, as part of a global Socialist and Communist revolution, and it has frequently been applied in the Asian, African, and South American contexts. But this view remained almost entirely absent in North America, except among radical Indigenous, Black, Asian, Caribbean, and Chicanx national liberation movements. The Treaty Council advocated Indigenous nationhood as part of this global anti-colonial movement and in line with Third World liberation movements. After decades of experiencing land loss, enduring bare survival, attempting to work with federal programs, filing court cases, defeating termination legislation, and facing mass relocation, an assertion of Oceti Sakowin sovereignty went from ambition to prescription. Few avenues remained other than the pursuit of international treaty rights. Treaties made with the United States were proof of nationhood. But what legal institution would uphold this position if the United States refused to? If the goal was to reverse the unjust occupation of an entire continent, the advancement of Indigenous rights through the very legal and political systems that justified that occupation in the first place had proven limited in some instances, and hopeless in others. To survive, AIM and the Treaty Council therefore had to look elsewhere to make their case—beyond the confines of the most powerful political construct in world history, the nation-state. Prior to and during colonization, Indigenous nations had self-organized into deliberate confederacies, alliances, and governments. The Nation of the Seven Council Fires (the Oceti Sakowin), for instance, is a confederacy of seven different nations of Lakota-, Dakota-, and Nakota-speaking peoples in the Northern Plains and Western Great Lakes. They are hardly unique; in North America alone there are the Creek Confederacy in the Southeast, the Haudenosaunee Confederacy of Six Nations in the Northeast, the Council of Three Fires (made up of Ojibwes, Odawas, and Potawatomis) in the Great Lakes region, the United Indian Nations in the Ohio River valley (under the Shawnee leadership of Tecumseh), the All Indian Pueblo Council of the Southwest, and the Iron Confederacy of the Northern Plains. Many other political confederacies also flourished prior to, alongside, and in spite of settler states in North America. And their legacies are hardly relegated to the primordial past. Modern Oceti Sakowin internationalism, for instance, traces its origins to the early twentieth century, an era generally viewed as a low point for Indigenous activism and resistance. In North America alone, an estimated precolonial population of tens of millions of Indigenous peoples had been reduced to about 300,000, and for Flathead historian D’Arcy McNickle, writing in 1949, two processes contributed greatly to this decimation: the institution of private property and the destruction of Indigenous governance that once held land in common. Indigenous nations at the time also possessed little in the way of either collective property or political power, as Indigenous territory had been drastically diminished, and the reservation system had overthrown or almost entirely dissolved customary governments. If Indigenous peoples once constituted the tree of the Americas, whose roots deeply entwined in the land, the cultivation of “growth from the severed stump,” McNickle argued, was the pivotal challenge of the twentieth century.7 Physical extermination and the repression of Indigenous political power verified the United States’ genocidal intent, but these had not accomplished their purpose. And despite otherwise stating pluralistic claims to inclusion, McNickle concluded that the United States simply “can not tolerate a nation within a nation.” If Natives were to be assimilated, they would be assimilated as individuals and not as nations. In the popular imaginary, Natives disappeared into the wilderness of history, were never truly nations, and had been overpowered by a superior civilization. If they were nations, they were eclipsed and replaced by the real nation—the United States. Such erasure notwithstanding, vibrant Indigenous political traditions persisted. But to the untrained eye, nothing was awry. From the severed stump began to regrow the tree of life—the tree of resistance that would blossom into revolt decades later.

#### --] Off the entire 1AC - space management cannot be understood outside of settler colonialism. The infrastructure, institutions, and Eurocentric values of space policy are considered the hallmarks of science and progress, which become weaponized against Indigenous resistance.

Matson and Nunn 17

(Zannah Mae Matson is a PhD student in Human Geography at the University of Toronto, Neil Nunn is a PhD candidate in the Department of Geography and Planning at the University of Toronto, 10-3-17, SPACE INFRASTRUCTURE, EMPIRE, AND THE FINAL FRONTIER: WHAT THE MAUNA KEA LAND DEFENDERS TEACH US ABOUT COLONIAL TOTALITY, Society and Space, <https://societyandspace.org/2017/10/03/space-infrastructure-empire-and-the-final-frontier-what-the-mauna-kea-land-defenders-teach-us-about-colonial-totality/>, JKS)

Mauna Kea is a dormant volcano and the highest point on the archipelago of Hawai’i. When measured from its base at seafloor, it is the tallest mountain on earth. These towering heights, in a region of the world with minimal light pollution has also earned Mauna Kea recognition of being one of the best spots on the planet for examining the cosmos. Long before the development of modern space infrastructure, however, the peak of Mauna Kea was regarded by native Hawaiians as among the most sacred places on the archipelago of Hawai’i. The place where earth meets the heavens. These divergent perspectives are embedded within a larger relationship of imperial domination that has seeded a century of unrest. While the primary focus of the protest was to challenge a half-century disregard for this sacred site by numerous entities and interests, the Battle for Mauna Kea cannot be understood outside Hawaii’s 125 year-long history of colonial occupation. In 1893, the Hawaiian Kingdom and its Queen, Lydia Kamaka’eha Lili’uokalani, were overthrown by a US led military coup (Long, 2017). Speaking to a spirit of resistance that has existed on the islands since the coup, scholar-activist K. Kamakaoka’ilima Long (2017: 15) states: “four decades of land struggles and cultural historical recovery… have grown a Hawaiian sovereignty movement… playing out in both land defense and as a movement to re-realize Hawaiian political independence as a sovereign state.” This recent assertion of self-determination, now known as the battle for Mauna Kea, has grown to become a global movement with broad support from high-profile figures and the hashtags #Wearemaunakea, #ProtectMaunaKea, and #TMTshutdown trending widely on social media. More than just a source of inspiration for the groundswell anti-colonial movements around the world, this story provides a context to better understand ongoing colonial occupation that is reinforced through the constitutive power of space infrastructure. Working from decades of resistance that culminated in the “battle for Mauna Kea,” we engage the notion of colonial totality to conceptualize the resistance to space infrastructure and the ongoing US occupation of Hawaii, reflecting on what this movement provides for better understanding totality and the relationship between space infrastructure and the shifting nature of colonial occupation more broadly. The notion of totality describes the process by which occupied spaces are coded with Western values in the form of normalized cultures, epistemologies, and institutions that produces an “atomistic image of social existence” (Quijano, 2007: 174). The institutions, ideologies and systems that advocate for the construction of space infrastructure exemplify this process. Astronomers frame the building of the observatory infrastructure as an essential piece in advancing our knowledge of outer space and ultimately achieving ‘universal’ progress. The resistance to development of these infrastructural systems is an invitation to consider the relationship between space as a frontier of discovery and ongoing questions of settler colonialism; the blockade has made visible the inherent relationship between the infrastructure of scientific exploration and the logic of totalizing colonial rationality that enables the development of massive telescopes on occupied land. While these perspectives of colonial totality provide a useful understanding of power and institutions that shape this conflict, we suggest that the Hawaiian land defenders’ refusal of the normalizing force of space infrastructure demonstrates the complexities and conditions relating to the notion of totality and ultimately the inadequacies of the concept. During a public comment period at 2015 University of Hawai‘i Board of Regents meeting, Dr. Pualani Kanaka’ole Kanahele gestures to both the totalizing colonial discourse that suppresses her cultural beliefs and the importance of fighting back against these systems: … we believe in the word of our ancestors…they say we are the products of this land and that is our truth…and that is what we are fighting for. This is our way of life. This is not our job. We don’t earn money from doing this. But for generations after generations, we will continue to be doing what we are doing today. What Dr. Kanahele speaks of goes beyond the physical destruction of the sacred ancestral site, to describe a hegemonic normalization and occupation that actively effaces traditional Hawaiian ways of being in the world. The words and actions of the land defenders challenge totalizing structures that classify space according to a narrow set of beliefs about the world. Working from these acts of resistance, we want to suggest that the Hawaiian sovereignty movement illuminates how systems of scientific thought and the project of space exploration rely on Euro-western values being the standard by which all other values are measured. It is this wide acceptance of these structures and principles of reasoning that serve to justify the construction of infrastructure that at once reproduces and fortifies these myths. This self-reinforcing relationship between the production of space infrastructure and the logics that justify it speaks to a powerful aspects of colonial totality: the way it gains power by rendering illegible the very elements relied upon to actively produce the other. The generally unquestioned salience of space infrastructure is a powerful example of this. As Quijano (2007: 174) describes, the relationship between colonialism and scientific discourse is a mutually reinforcing and “part of, a power structure that involved the European colonial domination over the rest of the world.” In Hawai’i, we see the settler colonial process of cultural attrition operating through a totalizing force of colonial knowledge systems that extend beyond physical occupation of land to include an erasure of Indigenous Hawaiian ways of knowing. Although the spatialities and technologies associated with this form of stellar navigation are radically dissimilar, we suggest that on a basic level, this form of space exploration is continuous with a lineage of Euro-western projects of discovery. In short, space as the ‘final frontier’ is not simply a metaphor but speaks to the role of astronomy in upholding the ongoing projection of values onto new territories and extending power and acquisition of territory to those complicit in colonial processes. This extends both to the world’s highest peaks and into the heavens. Space infrastructure is central to this ongoing frontier process that seeks to code ‘new’ territories as knowable according to certain values and, as a result, casts inhabitants who fall outside this paradigm as irrational, less-than-human, and exploitable. However, as Lowe (2015: 2) warns, these abstract promises of human freedoms and rational progress are necessarily discordant with the “global conditions on which they depend.” Which is to say that these atomistic systems dispose of the very relationships and elements of life that make them possible. A belief in respecting the sacredness of the world is just one example of this. It is also essential to recognize the process of establishing colonial totality is one that imperial forces have worked tirelessly to instill. Recognizing this helps to disrupt an appearance of givenness that colonial occupation relies upon. The land defenders have been vocal about this, reminding of us of the fact that since the arrival of James Cook to the Hawaiian Islands in 1778, settler colonial campaigns have been advancing longstanding patterns of cultural removal, fueled by beliefs in colonial supremacy. Following the coup and overthrow of the Hawaiian monarchy by US-led forces, a colonial oligarchy banned Hawaiian languages from schools and formalized English as the official language for business and government relations (Silva, 2004: 2-3). This legislation eroded language, culture, and sacred practice; and is an example of what Ngũgĩ wa Thiong’o (cited in Silva, 2004: 3) describes as a “cultural bomb” of settler colonialism that serves to “annihilate a people’s belief in their names, in their languages, in their environment, in their heritage of struggle, in their unity, in their capacities and ultimately in themselves.” According to Chickasaw theorist Jodi Byrd, continually reflecting on the historical and ongoing work that maintains the conditions of settler colonialism is essential to resisting the tendency for colonial constraint to appear inevitable, unresolvable, and complete (Byrd, 2011; see also Simpson, 2014). There was nothing, easy, given, or natural about processes of colonial occupation. While we acknowledge the usefulness of totality for thinking about colonial supremacy, we have concerns about its tendency to inscribe an inaccurate depiction of Euro-western superpower with total ideological control over subjugated Indigenous population. Put differently, we are cautious of the work that the notion of totality does to reinforce a too widely accepted view of Indigenous populations as helplessly dominated, or even anachronistic. The Hawaiian sovereignty movement demonstrates that this is not the case. What the battle at Mauna Kea has shown—akin to other efforts of refusal, such as those at Standing Rock—is that the war against colonialism is ongoing. At present, it appears the land protectors have been successful in their goals of halting construction, as the development team behind the project has begun considering secondary sites for the telescope. The resistance at Mauna Kea, then, is a powerful symbol of the possibility of rupturing the normative totality of Modernist scientific rationality, but it also underscores the recalcitrance of the structures of control and the challenges of pushing back against colonial occupation. However, despite this rupturing of hegemonic ideas of science and progress through the resistance movement, the dominant response from the scientific community has been largely one of confusion and perplexity. This reaction to the uprising speaks to the power of the narratives that cement the Western framework as ‘truth,’ ‘natural,’ and ‘given.’ For these representatives of state and international institutions, violent control is re-framed as co-existence to achieve Modernist notions of progress, while the claims of Indigenous people are reduced to frivolous demands with primitive and irrational connections to the past. This, of course, exists with little consideration of the irony of how this frenzy to build infrastructure that works to “know” the cosmos may be read as equally irrational. This essay has sought to consider the relationship between infrastructure and colonialism, emphasizing that even the most futuristic space telescopes have embedded within them a lineage of Euro-western cultural supremacy. It is important to recognize the extant materiality of these infrastructures as a manifestation of hegemonic systems that perpetuate myths of rationality and Euro-western cultural supremacy. The battle for Mauna Kea movement highlights the importance of remembering the long historical processes and extensive exertion of colonial constraint and cultural removal that has been necessary to maintain control of the land. Despite the social processes that naturalize colonial infrastructure, there is nothing essential, necessary, or pre-ordained about enormous telescopes. The success of the land defenders at Mauna Kea, and the support the movement gained around the world, shows us that Euro-western forces and the infrastructure that is central to maintaining their normative influence, are replete with fissures and contradictions worth pushing against. In spite of the hegemonic forces of modernity and rationality behind the construction of the TMT and a continued attempt to assert colonial totality, the battle at Mauna Kea indicates these hegemonic forces have been far from totalizing. The colonial powers do not have the final word. The land defenders at Mauna Kea have demonstrated a powerful vision for disrupting normative ways of occupying land and knowing the cosmos inspiring us to think further on the complexities of mobilizing infrastructure to resist colonialism. It is within these ruptures that we see a potential for a continued learning from the stars and our social existence.

#### --] Off their idea of a cooperative space environment, Cooperation assumes that space is a unique area that can transcend Earthly politics. This naïve assumption ignores the settler power dynamics that shape the process of cooperation.

Genovese 16

(Genovese, Taylor R. Doctoral student in the Human and Social Dimensions of Science and Technology (HSD) program at Arizona State University, where he is pursuing his interest in the social imaginaries of human futures on Earth and in outer space. 2016. “Fear and Loathing in Truth or Consequences: Neoliberalism, Colonialism and the Lineage of the Frontier at Spaceport America.” Space+Anthropology, JKS)

“This isn’t the government space age,” the tour guide continues. “This is the commercial space age. As a space corporation, you have two choices: cede the business and die...or innovate. There will be no more government hand-outs and that forces innovation.” I knew that I would be confronted with the neoliberal, capitalist mythos eventually; the NewSpace mantra of “pull yourself up by the spaceboot-straps.” However, what the tour guide said is not entirely true, considering the New Mexico General Fund Plus Special Appropriation is slated to give Spaceport America $2,262,000 in the 2017 budget. That means that 35% of the spaceport’s operating budget next year will be taxpayer money—“government hand-outs,” if you will. However, this is not a novel situation, corporate subsidies are an important tradition within the capitalist system. “Movement of people and goods is a natural progression,” preaches the tour guide. “The goal of humanity is to make the world a smaller place. Space travel can do that. For example, take what happened at Benghazi. Imagine we could deploy a SEAL team on rocket planes anywhere in the world within minutes!” I can barely take it. This is my first time visiting any NewSpace facility and—as an anthropologist—I want to remain a fly-on-the-wall for this initial visit. But the activist in me begins screaming and clawing its way up my throat. I was about to burst when a voice calls out from behind me. “OK, but wouldn’t it be great if we all worked together in space? Shouldn’t space be without a military application?” I breathe a sigh of relief as my activist personality begins to settle down. The tour guide begins with the double-speak that continues throughout the remainder of the tour. “That’s the good thing about space,” he says, floundering slightly at the tourist’s audacity to challenge corporate policy. “It transcends politics. The good thing about space is it’s a Trump- free zone. A Hillary-free zone.” Except that is obviously not true; and not just in the Foucauldian “everything is political” sense (i.e. that power dynamics exist in every facet of human interaction). Abu Dhabi’s Aabar Investments has a 37.8% stake in Virgin Galactic. SpaceX has put in unsolicited bids to launch American spy satellites. The metaphysical ideal of outer space may be a place beyond politics, but the reality in this “second space age” is that globalized capitalism—and all the politics that are inherently intertwined within it—are alive and well in the commercial space industry. The tour guide turns to the launching capabilities of the Boeing 747, especially as it pertains to Virgin Galactic’s LauncherOne program which hopes to strap a rocket to one of the wings of a 747, fly up to around 50,000 feet, and release the rocket to be launched the rest of the way to space. “Does anyone else see a problem with this photograph?” asks the tour guide—holding his iPad out for us to see— referencing the fact that there exists only one missile on one of the wings. “What about a 747 carrying missiles on both wings? What about bomb bay doors? There’s a lot of volume inside of a 747! It carried the Space Shuttle on its back, it seems like a waste to only carry a single missile.” He holds his hand flat and horizontal to us, as if his fingers are a 747 and then uses the index finger of his other hand to simulate spacecraft dropping from the belly of the aircraft—his palm. Almost a neoliberal haiku. I begin to feel sick. The tour guide continues with the double- speak. “But it’s not about spaceports. It’s not about spaceships. It’s about how can space better humanity?” We finally disembark the shuttle and head to the visitor exhibits inside of the terminal and hanger facility. A large mural—titled The Journey Upward—is adorned on one of the walls. This mural served as a summation of the NewSpace worldview and ideology. A natural, inescapable, linear progression toward human beings spreading into the cosmos: from dinosaurs (?) to Anglo-looking Paleo Indians to settler-colonists to space migration. This romanticized “lineage of the frontier” is tied to the capitalist dream—and mythology—of untold profits and constantly expanding markets. Of course, the capitalist mythology also likes to ignore the horrendous inequality and violence that tends to attach itself to the frontier mentality. When frontiers are seen as limitless, uninhabited and uncivilized, it encourages doctrines like slavery and Manifest Destiny. Yet NewSpace corporations seem to be overlooking the bigger picture and instead focus on the “glory of the frontier” as endless profit potential and romantic adventure.

#### --] The process and agents of political change matter. Indigenous internationalism must be asserted through Native sovereignty and organizing. We preempt the perm and the plan- they still collude with settlerism, which trades off with meaningful resistance.

Simpson 16

(Leanne Betasamosake Simpson, renowned Michi Saagiig Nishnaabeg scholar. She holds a PhD from the University of Manitoba, and teaches at the Dechinta Centre for Research & Learning in Denendeh. An Interview with Eve Tuck (Unangax̂), Indigenous Resurgence and Co-resistance, Critical Ethnic Studies, Vol. 2, No. 2 (Fall 2016), pp. 19-34, JKS)

PLACE-BASED INTERNATIONALISM

Eve: One idea that Wayne and I floated in our call for papers is that how a person or community understands the roots or source of injustice will have implications for how they go about undoing that injustice. Does this make sense to you? Might it be too simplistic or problematic?

Leanne: I think we need to be a bit careful here, particularly in the academy. I think Indigenous peoples understand pretty well injustice in their own lives whether or not they can articulate it using the language of colonialism or decolonization. I think movements that link social realities with political systems and focus on creating real-world-on-the-ground alternatives are powerful. I worry that too much of our energy goes into trying to influence the system rather than creating the alternatives. It matters to me how change is achieved. Change achieved through struggle, organizing, and creating the alternatives produces profoundly different outcomes than change achieved through recognition-focused protest, and pressuring the state to make the changes for us. That is a recipe for co-option. I think it is important to understand root causes of injustice, but it is also important to understand think strategically and intelligently about approaches to undoing that injustice. I think that diagnosis and strategic action must be done within grounded normativity. Indigenous thought has a tradition of place-based internationalism that I think is this beautifully fertile spot because it links place-based thinking and struggle with the same decolonial pockets of thinking throughout the world. Nishnaa- beg have been linking ourselves to the rest of the world since the beginning of time, and throughout our resistance to colonialism we have our people traveling throughout the world to link with other communities of resistors. Grassy Narrows First Nation comes to mind in their nearly four- decade fight against mercury poisoning in their river system and the relationship they have made with the Japanese community in Mnimata.6 We need to use our experiences in the past to think critically about how we respond to injustice today. Right now, Indigenous peoples in Canada need to be thinking critically about the implications of seeking recogni- tion within the colonial state because we have a government that is very good at neoliberalism and seducing our hope for their purposes. Again, Glen Sean Coulthard, in Red Skin, White Masks, using the Dene nation’s experience in the 1970s, provides a blistering critique of the pitfalls of seeking political recognition within state structures. He makes the point that continually seeking recognition with the settler-colonial state is a process of co-option and neutralization, and is a way of bringing Indigenous peoples into the systems that guts our resistance movements, for instance, and we get very little in return.7 In fact, in terms of dispossession—that is, the removal, murdering, displacement, and destruction of the relation- ship between Indigenous bodies and Indigenous land—this serves only to facilitate land loss, not improve things. Engagement with the system changes Indigenous peoples more than it changes the system. This can be destructive in terms of resurgence because resurgent movements are trying to do the opposite—we are trying to center Indigenous practices and thoughts in our lives as everyday acts of resistance, and grow those actions and processes into a mass mobilization. I think it is useful to apply this same critique of recognition to orga- nizing and mobilizing with the purpose of making a switch from mobi- lizing around victim-based narratives—that is, publically demonstrating the pain of loss as a mechanism to appeal to the moral and ethical fabric of Canadian society (which has over and over again proven to be morally bankrupt when it comes to Indigenous peoples)—to using that same pain and anger to fuel resurgent actions. This organizing from within grounded normativity has always fueled Indigenous resistance and continues to happen all the time in Indigenous communities—it is just often misread by others. The community of Hollow Water First Nation created the Community Holistic Circle of Healing as a Nishnaabeg restoration of relationships, or a restorative justice model to address sexual violence in their community.8 Christi Belcourt’s Walking with Our Sisters exhibit has created a traveling display of 1,800 moccasin vamps as a way of honoring and commemorating missing and murdered Indigenous women and children in Canada and the United States. The exhibit does not rely on state funding.9 Thousands of volunteers made the vamps. The exhibit works with local communities and their cultural and spiritual practices to install the exhibit and do the necessary ceremony and community processes. Walking with Our Sisters works with local organizers a year in advance of installation, using Indigenous processes to embed the art in community on the terms of the local community. There is also the work of countless urban Indigenous organizations supporting the families of MMIWG2S people. The Native Youth Sexual Health Network provides on-the-ground, community-embedded, peer-to-peer support around sex- ual health and addiction for youth.10 The Akwesasne Freedom School provides Mohawk education for Mohawk children.11 The Iroquois national and Haudenosaunee women’s lacrosse teams travel using Haudenosau- nee passports instead of American or Canadian ones.12 The Unist’ot’en Camp pursues land protection resurgent action and the reclamation of the original name of Mount Douglas, PKOLS, in the city of Victoria, British Columbia.13

#### --] Interpretation: The 1AC is an object of research. The role of the neg should be to disprove the various meanings of that object. Plan focus restricts the debate to a ten second statement and leaves the rest of the aff unquestioned. They should be responsible for the way their knowledge is constructed and used because that produces the best model for activism and ethics in the context of the topic which is a unique education net benefit to our interpretation

#### -They get to weigh their aff’s research and the reasons why that research is desirable, which resolves any fairness concerns

#### -All of our links implicate the effects of the plan, which is sufficient for plan focus

#### --] The role of the ballot is to center indigenous scholarship and resistance-- Any ethical commitment requires that the aff place themselves in the center of Native scholarship and demands.

Carlson 16

(Elizabeth Carlson, PhD, is an Aamitigoozhi, Wemistigosi, and Wasicu (settler Canadian and American), whose Swedish, Saami, German, Scots-Irish, and English ancestors have settled on lands of the Anishinaabe and Omaha Nations which were unethically obtained by the US government. Elizabeth lives on Treaty 1 territory, the traditional lands of the Anishinaabe, Nehiyawak, Dakota, Nakota, and Red River Metis peoples currently occupied by the city of Winnipeg, the province of Manitoba, (2016): Anti-colonial methodologies and practices for settler colonial studies, Settler Colonial Studies, DOI: 10.1080/2201473X.2016.1241213, JKS)

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 humi- lity 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 pro- vided 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

## 2

#### 1] Space innovation is high and on the rise- **but innovation could tank in the absence of private companies**

Peterson 21 Bob Peterson is based out of Colorado Springs, Colorado, United States and works at Lockheed Martin as VP Space Systems. Peterson, Bob. “Commercializing the Race to Space - Insigniam.” Insigniam, August 9, 2021. https://insigniam.com/private-space-exploration-innovating-future-space/.//WL

After publicly stalling out due to cost concerns circa 2011, America’s space race is quickly heating up again. Only instead of NASA, this time it’s being spearheaded through private space exploration by three billionaire investors and the companies that mirror these entrepreneurs’ out-of-this-world ambitions: Richard Branson (Virgin Galactic), Elon Musk (SpaceX) and Jeff Bezos (Blue Origin). Expected to be a $1.4 trillion market by 2030, according to analysts at Bank of America, private space exploration and tourism are already ushering in a host of new innovations outside of traditional aerospace and defense realms. For example: Morgan Stanley suggests that the business world’s growing rush to reach orbit may also help sate the world’s ever-growing appetite for high-speed satellite broadband technology and data, kick-start rocket-fueled delivery services and even enable asteroid mining in years to come. Here, we take a closer look at the field’s three front-runners, how each is pioneering new scientific advancements, and various trickle-down innovations that private space exploration may soon bring back to dozens of industries on planet Earth. Virgin Galactic On July 11—just 17 years after announcing the company—Virgin Group founder Richard Branson took his inaugural trip 53 miles above the Earth’s surface in Virgin Galactic’s suborbital, rocket-powered space plane VSS Unity. Capable of holding six passengers and two pilots, the craft isn’t likely to be earthbound for very long; the company has already sold around 600 tickets for flights at the princely sum of $200,000 to $250,000 apiece. As of early August, more tickets were available starting at $450,000 each. The increasing desire for private space exploration points to companies’ growing desire to more cost-efficiently use resources, leverage emerging or preexisting technology in new ways, optimize processes and workflows, and pioneer new markets by democratizing access to resources and equipment. The first of the billionaire space company founders to reach the edge of space (depending on the definition), Branson did so thanks to myriad scientific and business innovations made by his firm. Advancements not only include a new high-speed aircraft design that leverages modular technology to improve flight rate and maintenance access. They also incorporate a livery design built from a mirrorlike material that provides heightened thermal protection and color-changing potential, a spectacular display of the plane’s advanced capabilities in keeping with Branson’s notoriously flashy brand of showmanship. These upgrades have helped power Virgin Galactic’s ongoing push to capture public and media attention, enticing armchair astronauts to fulfill childhood dreams and fueling a booming business in space tourism. Moreover, unlike traditional crewed rockets, which launch from ground-based locales, Virgin’s ships lift off from bigger planes that drop them off in midair. It’s a highly efficient technique that consumes less fuel and reduces the need for custom launch pad infrastructure. Passengers, who can enjoy three to five minutes of weightlessness, will soon include scientists who can run experiments midflight, as opposed to primarily using traditional suborbital space testing methods—i.e., spacecraft without a crew. SpaceX Tesla founder Elon Musk’s SpaceX is an all-purpose space technology firm that designs and manufactures myriad cutting-edge rockets and spacecraft. Case in point: Its Dragon capsule has already proved it can cost-efficiently carry crew and cargo to the International Space Station. The company’s Starship large-scale rocket and spacecraft system is also designed to carry massive payloads into orbit—and, thanks to NASA’s support, is expected soon to land the first astronauts on the moon since the Apollo program. Not yet 20 years old, SpaceX is additionally focused on introducing more dependable equipment at a fraction of standard production and operating costs. Other innovations include the Falcon 9, a reusable two-stage rocket for repeatedly transporting people and equipment into space, and Falcon Heavy, the world’s most powerful rocket today, which can carry twice as much weight as its closest competitor. SpaceX’s ambitions even extend to commercial space flight and ride-sharing if you or your company’s inventory need to catch a quick lift into the atmosphere. Almost as curious as the company’s public-facing creations are those powering its operations behind the scenes, including a fleet of autonomous drone ships that catch rockets as they hurtle back to earth, landing in the ocean. SpaceX is also heavily investing in building out Starlink, a broadband internet service powered by thousands of satellites that has the potential to bring high-speed connectivity to remote and rural areas around the globe. In short, by leveraging a host of leading-edge technical advancements to power practical innovations in communications, transport and aerospace operations, SpaceX aims to privatize the field of space flight as a whole. No wonder NASA ranks among the company’s biggest customers. Blue Origin The brainchild of Amazon founder Jeff Bezos, Blue Origin was founded in 2000 with the mission of expanding humanity’s reach into space, fueling interstellar exploration, and powering the search for new material and energy resources. It hopes to do so by delivering low-cost, fully or partly reusable orbital launch vehicles that can serve the needs of businesses and individuals alike. One person recently paid an astounding $28 million for a ticket. Unlike Virgin Galactic, Blue Origin makes spacecraft that are able to cross the Kármán line—the 62-mile-high measurement that most countries consider to be the boundary of outer space. (The U.S. uses 50 miles as a benchmark instead.) The company’s mantra is “Launch, Land, Repeat,” a testimonial to its commitment to drastically lower expenses associated with space travel, and to the built-in vertical takeoff and landing technology that allows used vehicles to be quickly refurbished and once again take flight. Note that Blue Origin is also experimenting with oversized lunar landers designed to ferry astronauts and equipment affordably to and from the moon. Investment Opportunities and New Innovations The increasing desire for private space exploration points to companies’ growing desire to more cost-efficiently use resources, leverage emerging or preexisting technology in new ways, optimize processes and workflows, and pioneer new markets by democratizing access to resources and equipment. Each of the big three players has sought to tap into a mix of proprietary and community knowledge bases, leverage new high-tech and engineering advancements to lower overhead and operating costs, and boost the accessibility of space travel. Likewise, all have looked to raise public awareness, amortize their investments in new innovations and extend potential revenue streams by finding new business applications for their proprietary solutions at every turn. To read more about the commercialization of space, read “Commercial Space Is Becoming Big Business.” Virgin Galactic is publicly traded, Blue Origin and SpaceX are not. However, more than 10,000 companies (42% of which are American), worth upward of $4 trillion in total, are now pioneering space-based business solutions. In addition, many of these firms—which are looking to make plays in many fields, like telecom, tourism, artificial intelligence and robotics—are investor-friendly startups helping to further capitalize or expand upon the innovations that the big three players are ushering in. Key areas of growth going forward for space-based business are expected to include navigation and mapping, satellite communications, cloud-based applications, manufacturing, and health care/medicine. And that’s before you factor in potential research and scientific applications. Example: the University of Florida researching plants’ changing gene activity in weightless environments via experiments conducted in partnership with Virgin Galactic. It’s yet to be determined whether billionaire-funded private space exploration spaceflight firms will successfully deliver on their aim to democratize space travel, or such trips will remain a prohibitively pricey luxury for most aspiring voyagers. Regardless of whether casual flights into space and stargazing business or research contracts become more commonplace, it’s clear that this nascent field has a promising future. While a Jetsons-style culture of weekend jaunts into orbit is still the stuff of science fiction for now, don’t forget: Succeed or fail, to their credit, all of these firms are helping expand businesses’ ambitions to the stars and beyond and helping illustrate a multitude of potential new uses for aerospace solutions.

#### **2] Private space firms are key to promote competition and drive innovation**

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On 11 July UK billionaire businessman Richard Branson travelled to the edge of space in a spaceplane developed by his company, Virgin Galactic. On Tuesday this week, the billionaire founder of Amazon, Jeff Bezos, will take a similar trip to space aboard the New Shepherd rocket built by his Blue Origin company. Elon Musk’s SpaceX will soon begin sending paying civilians into Earth orbit with the company’s Falcon 9 rocket. The ability of such billionaires to afford private spaceflight trips or invest in heavy-lift rockets, while paying a smaller fraction of income in tax than the average American, reflects inequality in America. This inequality has been made especially stark during the COVID-19 pandemic with billionaires’ wealth increasing while many others experienced financial hardships. Increasing wealth and reaching for space has not purchased popularity for these billionaires. Ahead of Bezos’ upcoming suborbital flight, a petition to “not allow Bezos to return to Earth” gained more than 160,000 signatures. Richard Branson has been criticized for using his wealth to go to space rather than addressing more terrestrial problems like climate change. But after half a century of government-led exploration beyond earth, why are billionaires now at the forefront of our minds when we think about space travel, and what do they mean for how we go to space? The private sector has always had a close involvement with space Billionaire interest in space is not new. Historically, science research funding for observatories in the 19th and 20th centuries was typically provided through endowments from wealthy individuals. Institutions such as the Smithsonian and the Guggenheim family were the early donors of Robert Goddard’s ambitious projects to develop rockets and space technology. Following 1980s initiatives like MirCorp’s plan to provide privately owned space stations, the 1990s and 2000s saw commercial space efforts like Peter Diamandis’ introduction of the Ansari X Prize (1996), the US government’s Alternate Access to [the International Space] Station Program (2000-2002), and the founding of Mojave Aerospace Ventures (2004). Between 2001 and 2009 seven wealthy people went to space as paying customers on Russian Soyuz rockets including Dennis Tito, Iranian American businesswoman Anousheh Ansari and Cirque du Soleil founder Guy Laliberte. More recently, aside from Jeff Bezos and Richard Branson, other billionaires have also planned trips to space, including Jared Isaacman and Yusaku Maezawa. The wave of billionaires now seemingly interested in space exploration is a return to a past trend. Space exploration is expensive Private actors and the government think differently when it comes to what type of space programs to prioritize. The government prioritizes aspects of a space program that are in the public-interest such as national security and Earth sciences, while wealthy individuals that enter the space sector are interested in personal and financial endeavors that involve space exploration, such as making life multiplanetary for Elon Musk and space tourism for Richard Branson and Dennis Tito. The Apollo program which ultimately sent astronauts to the moon in 1969 is thought of as the height of US government leadership in space. But the massive investment which made the first moon landing possible was an anomaly that had been driven by political necessity given the climate of the Cold War. As Figures 1 and 2 show, by 1965, the US government had begun to cut NASA’s budget to the point that by the 1970s it made up only about 0.5-1 percent of the total federal budget. According to Dr. John Logsdon of George Washington University’s Space Policy Institute: “From 1970 onward, NASA has not had a budget adequate to support a robust program of human exploration.” Figure 1 – NASA’s budget from 1959 – 2025 Source: The Space Report Figure 2 – NASA’ share of US federal Budget 1959-2018 Source: The Space Report The lackluster interest in space exploration by the US government since the 1970s sits alongside with a similar lack of enthusiasm by the American public. In a 2018 survey conducted by Pew Research Center, a majority of American adults believed that that monitoring Earth’s climate system should be the highest priority and sending astronauts to Mars and the Moon the lowest (Figure 3). Figure 3 – Americans’ views on policy priorities Source: Pew Research Center, 2018 Re-emergence of commercial space At the same time, many wealthy individuals have been dissatisfied with the lack of public enthusiasm and the lack of progress in recent years due to the government’s traditional view of space operations, and failures of the Space Shuttle. Wealthy individuals like Musk believed that they could spur a robust marketplace for providing access to space which could work alongside and provide services for government space agencies by leveraging reusable technologies, lean manufacturing, and vertically integrated production to enable cheap space access. Because typical debt and equity investors are unwilling to finance the risks of space exploration and the government is unable or uninterested in large up-front investments, it is natural for private space exploration to be funded out of billionaire’s own wealth initially, with government support through development contracts. Government support and US Commercial Space Policy Without the government, the private sector cannot thrive in space. The government supports the private sector by adopting regulatory reforms or creating contracts and awards. Early attempts to invigorate the commercial space industry include the 1984 Commercial Space Launch Act, which was unsuccessful as US launch firms were unable to compete against NASA’s Space Shuttle. President Reagan’s 1986 US Space Launch Strategy reduced NASA’s ability to provide commercial launches, which led to the re-emergence of commercial space activities. The limitations provided by the 1986 policy led to the first commercial space launch by Space Services, Inc. in 1989. The US government under the Obama administration made policy reforms such as introducing fixed price contracting to support development of commercial services. An example of this was a request for over $6 billion to subsidize commercial crew vehicles to visit the International Space Station for the Commercial Crew Resupply (CRS) program. Congressional appropriators in the Senate created a “Dual-track” approach, exemplified by the 2010 NASA Authorization Act, which calls for commercial cargo development. The bill shows that policymakers were willing to compromise on certain aspects of the space program such as CRS to support private space launch companies. By 2010, commercialization was well underway with Obama’s National Space Policy that emphasized supporting a “competitive US commercial space sector.” As of 2011, NASA had paid SpaceX $181 million for 14 Commercial Resupply Missions and $298 million under the Commercial Orbital Transportation Services Demonstration Agreement. The Trump Administration increased public investment in private space actors further and established a series of Space Policy Directives that were meant to bolster the commercial sector. Government support to the private sector further comes in the form of NASA- approved loans, loan guarantees, and tax credits. Firms can also receive tax exemptions through facility constructions, discounted loans, and environmental credits. It is estimated that all of Musk’s ventures, not limited to SpaceX, received at least $4.9 billion in government support through tax breaks, factory construction, discounted loans, environmental credits, facility loans, and rebates to product buyers. Photo by SpaceX on Unsplash How billionaires support the space industry Private investment in space has created competition and reduced space launch costs. New space actors began to challenge the government-created monopoly, United Launch Alliance (ULA), for contracts, creating competition and introducing a market for small-medium class reusable launch. SpaceX’s Falcon 9’s average cost is $62 million, while ULA’s Atlas V starts at $110 million per launch. Commercial actors enable the government to have multiple competitive proposals to select from during project development. NASA would pay less money upfront for a service, while private companies can operate and have autonomy over their final product. The government can act as a buyer of commercial services, which allows NASA to be more efficient and cost-effective, as the agency can cut costs by only developing projects it has expertise and funding for. Such competition has dramatically changed space technology. New players that enter the space industry are able to embark on ambitious projects at a greater scale and faster pace. Innovative concepts such as reusable rocket stages has shifted the launch industry into integrating reusability into vehicle design and the proliferation of ridesharing missions has decreased the costs of space launch. This has lowered barriers to enter the space industry, making small satellites rideshare as low as $1 million per mission. Innovations in space launch have further changed the policy environment and streamlined launch and reentry regulations. Billionaires in space are here to stay Investment from wealthy individuals in recent decades have stimulated private markets and paved the way for many startups to enter the industry. As more new players join the commercial space industry, access to space becomes cheaper, resulting in an explosion of proposed satellite constellations and small launch vehicle concepts. Wealthy entrepreneurs have seen an opportunity to take advantage of a lack of government interest in space exploration funding. The high-risk nature of space exploration requires substantial upfront investment that only wealthy individuals can provide before any pay-off. Private investments in space promote competition and innovation. Billionaires providing upfront investments has stimulated the space market and made space more accessible – and profitable.

#### **3] Space innovation is key to colonizing outer space- scientific discovery promotes breakthroughs that benefit society**

Raghavan 21 Seetha Raghavan is a professor in UCF’s Department of Mechanical and Aerospace Engineering. “The Impact of Innovation in the New Era of Space Exploration | University of Central Florida News.” 2021. University of Central Florida News | UCF Today. August 5, 2021. https://www.ucf.edu/news/the-impact-of-innovation-in-the-new-era-of-space-exploration/.//WL

Every once in a while, a confluence of discoveries, events and initiatives results in a breakthrough so significant that it propels the entire world to a higher level, redefining what is possible in so many different fields. This breakthrough is taking centerstage now, as the new era of space exploration — catalyzed by increasing launch access — dawns upon us. The surge of innovation that comes with this will create new opportunities and inspire the next generation of doers. When this happens, boundaries between scientific and social impact are blurred. Innovation leading to scientific discovery can benefit society in the same way that social innovation can diversify and support scientific innovators, who can contribute to global progress. To ride this wave of progress, we must all participate and innovate in the new era of space exploration. The intersection of space exploration, innovation and impact isn’t a new phenomenon. In the past, technology developments and spin-offs from space research have consistently found their way into communities worldwide sometimes with lifesaving benefits. The International Space Station supports experiments that have led to discoveries and inventions in communication, water purification, and remote guidance for health procedures and robotic surgeries. Satellite-enabled Earth observation capabilities that monitor natural disasters, climate and crops often support early warnings for threats and mitigation strategies. Space exploration has always been relevant to everyone no matter the discipline or interest. Commercialization of space has been key in many ways to the current boost in “firsts” over the last few years. It has spurred innovation in launch vehicles and related technologies that led to firsts in vertical-takeoff-vertical landing rocket technology, reusability of rocket boosters and privately developed crewed missions to orbit. Concurrently, NASA has continued to captivate our imagination with the first flight of a helicopter in another world, a mission to return an asteroid sample to Earth and sending a probe to make the closest ever approach to the sun. While we celebrate the scientific progress, there is a vastly important question that we all need to focus on: How can we drive the surge in innovation offered by increased access to space, to benefit humankind? Access to low-Earth orbit, and eventually human exploration of space, is a portal to achieve many impactful outcomes. The numbers and completion rate of microgravity experiments conducted by scientists will be greatly increased as a range of offerings in suborbital flights provide more opportunities to advance critical research in health, agriculture, energy, and more. Lunar, planetary, and even asteroid exploration may lead to discoveries of new materials — busting the limitations now imposed on capabilities for energy, transportation, and infrastructure or creating new sensors and devices that enhance safety on Earth. Space tourism —one can hope — has the power to potentially create an awareness of our oneness that may lead to social change. But much like all scientific endeavors, we cannot ignore the importance of pre-emptively identifying and mitigating negative impacts of new ventures some of which may have already taken shape. We need to consider space debris that threatens the very access that facilitates it, safety and rescue readiness to support increased crewed missions and space tourism, national security, and effects of light pollution on astronomy. Much of these can be approached and mitigated with new concepts and ideas that have already been set in motion. One thing is for certain, space has always been the inspiration for the next generation of innovators and creative thinkers. Architects of new ideas in this era will inspire many more. Ingenuity must also come from academic and research institutions building a new space-ready generation through innovative curriculum, scholarships, and research opportunities for key fields at all levels. Most of all, engaging participation is a responsibility anyone can take by steering the conversation and gathering ideas on how we can make this era one of positive benefit for all, while making opportunities inclusive to all.

#### 5] Not colonizing space directly links to human and extraterrestrial extinction scenarios, which outweigh

Munevar, PhD, 19 [Gonzalo Munevar, Professor Emeritus at Lawrence Technological University, PhD Philosophy @ UC Berkeley. "An obligation to colonize outer space", Futures, Vol. 110, Pg. 38-40, published June 2019, accessed 11-1-2021, https://www.sciencedirect.com/science/article/abs/pii/S0016328718302660#!] HWIC

We have an obligation to colonize outer space. This colonization may include establishing bases on the Moon, Mars, and other bodies in the solar system, perhaps leading to terraforming some of them, as well as building the sorts of space colonies championed by Gerard O’Neill.1 By doing so we may save humanity from collisions with asteroids and other cosmic catastrophes, while also bringing clean energy to Earth and giving us access to the resources of the solar system. Carrying out such tasks will, moreover, increase our scientific knowledge of heaven and Earth. A collision with a large asteroid may bring human life on Earth to an end. Space colonization would allow human life to continue. Smaller, and far more likely, collisions will cause great destruction and kill millions of people. Furthermore, a heavy human presence throughout the solar system would make it possible, even highly probable, that many such collisions may be prevented, thus saving billions of humans, and many other living beings, from a horrible death. And whether we are able to avert such a catastrophes, the sun will become a red giant in four or five billion years; but even long before then, it will make the Earth an unbearable planet. In the long run, thus, space colonization will give terrestrial life another chance. Space colonization will give us many opportunities to improve the Earth itself, for example by moving polluting industries into space, providing clean solar power from space at reasonable prices, and making available to our home planet many of the resources of the asteroids and other bodies in the solar system. Doing so will enable us to increase our knowledge of the universe, and particularly of planetary science, which would then permit a wiser approach to our own planet. The word limit narrows my scope, and thus I will concentrate on the likelihood of collisions with comets and asteroids. Gravitational disturbances of the asteroid belt, the Kuiper Belt (a little beyond Pluto) or of the Oort cloud, in the outskirts of the solar system, send many large bodies towards the sun.2 Some of them collide with the planets and moons of the solar system. Consider that there are trillions of objects larger than 1 km and billions larger than 20 km in the Oort cloud alone. Given its position, and its gravitation, the Earth becomes a target for collisions. Even in recent geologic times (within the last 100 million years) large meteors indeed have collided with the Earth, altered the weather catastrophically and brought extinction to the majority of species then living. One asteroid about 10 km in diameter, now called the Alvarez asteroid, is held responsible for the disappearance of the dinosaurs about 65 million years ago,3 although some think a comet may have been the culprit.4 And in 1994, large fragments of Comet Shoemaker-Levy 9 hit the atmosphere of Jupiter at velocities over 200,000 km per hour, exploding with a brightness as much as fifty times that of the entire planet, and ejecting searing materials thousands of kilometers above the clouds. Had Shoemaker-Levy 9 hit the Earth instead, we would have gone the way of the dinosaurs.5 Apart from the realization that our natural history has to make conceptual room for such catastrophes,6 there is a most obvious practical issue of survival involved. With a reliable tracking system in place, space technology might allow us to change the orbits of those comets or asteroids most in danger of colliding with the Earth. But how worried should we be? According to present models, meteors large enough to create Meteor Crater in Arizona would hit an urban area every 100,000 years on average. That meteor was presumably 60 m across; the crater is 1.2 km across. A body with a diameter of 250 m would cause a crater 5 km across and destroy some 10,000 square Kilometers (about the area of greater Los Angeles). And global catastrophes would take place every 300,000 years. These would be caused by meteors with a diameter of approximately 1.7 km.7 What is the evidence for these calculations? Soon after impact on Earth, craters are attacked by wind, water, life, lava and a myriad of tectonic motions. In the blink of an eye, geologically speaking, all obvious traces of them disappear from the surface of our active planet. But we find a good record on the Moon. And in Venus, where most of the surface is 600 million years old, the spacecraft Magellan counted nearly one thousand impact craters at least twice the diameter of Meteor Crater. Venus is almost the same size as Earth, and in the Earth’s vicinity, and since the impacts are geologically recent, the Venusian impact record makes it reasonable to fear catastrophic impact on Earth every half a million years or so.8 Still greater collisions, with bodies of 5 km across, would happen, on the average every 20 million years.9 Apart from the asteroid that led to the extinction of the dinosaurs and the majority of species on Earth 65 million years ago, there have been at least two more impacts by asteroids 10 km or larger in the last 300 million years.10 New worries have been caused by the discovery of “rogue planets,” i.e. planets that were expelled from their solar systems and boulder their way through interstellar space. Some will be rocky like the Earth and some will resemble Jupiter, even much larger, carrying their large moons with them. Were one of them to come into our solar system, it would disrupt the orbits of our planets, perhaps sending the Earth itself into interstellar space. A collision would pulverize both bodies. Some scientists think that there are far more rogue planets than stars in the Milky Way, whereas the lowest estimate of Jupiter-size rogue planets is that of one per every four stars.11 Whether those of us living today will experience such catastrophes, eventually our descendants will be thankful to us for creating a warning system and the technology to prevent disaster.12 There can hardly be a better reason than the preservation of life, and perhaps the survival of the species, to establish the importance of colonizing space. An expansion of human colonies throughout the solar system would make it far easier to reach, say, an asteroid in a collision path with the Earth, when it is still very far away, and thus when the angle is small and the necessary alteration of its path will be relatively minor. Such deflection can be accomplished by several means: astronauts could make a smaller asteroid collide with the larger one, or use one of the mass drivers designed by O’Neill. Nuclear explosions might work also. If we are established in outer space. To do a proper mission starting from Earth may take many years, thus making it far less likely to succeed. Robotic deep-space missile platforms, which can never achieve human flexibility, let alone human ingenuity, are unlikely solutions, as can be gathered from previous discussion on robotic missions.13

## Case

#### NU – space is already a global commons

#### Plan fails –

#### Global commons still allow for private appropriation

#### China inevitably undermines solvency

#### Too many private actors ensure conflict

#### 4] Circumvention guarantees that private companies won’t listen- what good is declaring the space a global commons? If their argument is true about space companies interested in exploitation, don’t let them get any solvency since companies will just circumvent

#### Space law and commons in general will be *near impossible* to enforce—numerous jurisdictional issues on other planets.

Gohd 19

Chelsea Gohd, senior writer, worked for American Museum of Natural History, Scientific American, Discover Magazine Blog, Astronomy Magazine and Live Science, 8-29-2019, "Who Investigates a Crime in Space?," Space.com, https://www.space.com/who-investigates-space-crime.html //MLT

As human spaceflight advances to Mars or to long-duration lunar settlements, legal issues will be more likely to arise again in space. At that point, the already-murky waters of addressing space crime will become even less clear. It is possible, then, that as we venture out farther into the solar system for longer periods, we will need to further develop regulations and guidelines surrounding criminal jurisdiction in space. For a lunar or Martian colony, criminal jurisdiction would at first "use what we currently have as the baseline," von der Dunk said. So a U.S. astronaut flying to Mars on a U.S. spacecraft would be subject to U.S. jurisdiction. But things would get more complicated as more people came to the moon or Mars and humans began spending more time on these bodies. For example, if a person flies to the moon, "step[s] out of the lunar module, send[s] it back and stay[s] for four years longer on the moon, they are no longer personnel on the spacecraft," von der Dunk said. So, while such an individual would have been considered under U.S. jurisdiction because they flew aboard an U.S. vehicle, would this still apply once they no longer worked or lived on that craft? Additionally, "space law has a peculiar twist, because this jurisdiction applies to space objects, and space objects are seen as something launched by humans into outer space," von der Dunk said. So, if humans manufacture homes out of local material on the moon or Mars, would jurisdiction change because astronauts would no longer be in a habitat or craft from an Earth nation?

#### Yes, the plan is circumvented, AND we turn - limitations on commons access such as private entity restrictions lead to backlash

Stang 13

Gerald Stang (associate fellow at the EUISS) , 2013, "Global Commons: between cooperation and competition" European Institute for security studies, https://www.iss.europa.eu/sites/default/files/EUISSFiles/Brief\_17.pdf, // HW AW

Rapid economic development and increasing international trade are leading to a more crowded international stage and raising new challenges in the ‘global commons’ – those domains that are not under the control or jurisdiction of any state but are **open for use by countries, companies and individuals from around the world**. Their management involves increasingly complex processes to accommodate and integrate the interests and responsibilities of states, international organisations and a host of non-state actors. Shared rules regarding the usage of - and access to - the global commons encourage their peaceful and cooperative use. Over the last seven decades, the US has led in the creation of a liberal international order which has attempted to define these rules in such a way as to make it easier and more beneficial to join the order and follow the rules than it does to operate outside of (or undermine) it. With the rise of nonWestern, less liberal powers - particularly **China - questions must be asked regarding the durability of the existing processes for managing the global commons,** along with the potential for developing effective new processes that can address new threats and challenges. The EU is uniquely positioned to play an important role in giving value to existing multilateral frameworks and in developing new ones for international cooperation in these domains. But with a multitude of competing interests among stakeholders, much work remains to be done. What exactly are the global commons? Security analysts generally identify **four domains as global commons: high seas, airspace, outer space** and, now, cyberspace. From a security perspective, the primary concern is safeguarding ‘access’ to these domains for commercial and military reasons. It is important to highlight that this language differs from the discourse on commons developed by environmental analysts: their arguments focus on damage to the ‘condition’ of the commons from overuse by actors who do not have to pay direct costs. They worry about the depletion of shared resources such as ocean fish stocks, or the damage to shared domains such as Antarctica or the atmosphere. A third strand of analysis looks not at the need for ‘access’ to or preservation of the ‘condition’ of the commons, but at the capacity of the commons to provide ‘global public goods’. As there is no accepted definition of a global public good (a functioning trading system, peace, clean water, electricity, the internet, and many other things are often included), it may be wiser to focus on the four global commons relevant to security analysts mentioned above. While there are major differences between the ‘access’ views of security analysts and the ‘condition’ views of environmentalists, both are concerned about how the Global commons: Between cooperation and competition by Gerald Stang Photo by NASA / Rex Features (1568628a) European Union Institute for Security Studies April 2013 2 rules for use of the commons are set and enforced. In today’s interconnected world, **any limitations on access to the commons would be highly disruptive**. Militaries rely on access to the commons to pursue security goals in domains outside their sovereign control. Economic actors rely on the commons to trade and conduct business. **Changes to the condition of the commons can therefore disrupt commerce and security, not to mention the status of the global environment.** Each of the four commons discussed below possesses unique attributes and poses unique challenges for international cooperation and governance. Sea As the primary avenue for international commerce since ancient times, norms for access to and passage on the seas have developed and evolved over many years. Only in recent decades, however, have there been agreed regulatory frameworks and institutions to manage them. The UN Convention on the Law of the Sea (UNCLOS), first initiated in 1956 though not legally in force until 1994, is the primary international treaty regarding the sea, laying out rules for territorial boundaries (22km from shore), resource management and the rights of states within their exclusive economic zones (370km from shore). The International Tribunal for the Law of the Sea (ITLOS), created by UNCLOS, has the power to resolve disputes by States Parties. Except for the US, most countries and all global powers - including the EU-27 - have signed and ratified UNCLOS. The UN International Migratory Organization (IMO), created in 1948, regulates international shipping and rulings on safety, environmental and technical cooperation issues (the EU has observer status). As the world’s only global sea power, the United States has historically seen itself as the protector of free movement on the seas. With 11 carrier groups (Russia has one, rarely used) and hundreds of naval bases and allied ports throughout the globe, the US has a naval footprint that dwarfs all its allies and competitors. While countries such as Iran and China may be uncomfortable with US capacity to deny others access to the sea, US support for the creation and respect of transparent international regulations for use of the sea (which they adhere to themselves despite not having ratified UNCLOS), has allowed for the stable management of access to the seas. Except for the disruptive (but still rare) threat of piracy, access to the seas is generally a smooth and well-regulated process. The massive and relatively effective, if ad hoc, global response to the localised piracy problem off the coast of Somalia (for which the EU launched Atalanta, its own anti-piracy mission under the CSDP) highlighted the world’s impressive capacity to handle disruptions of this type. Territorial disputes exist in places like the South China Sea, but relate to historical boundary disagreements rather than conflict over rules of sea access. Normally, no state has an interest in disrupting sea trade. Even in times of crisis, while individual states may wish to deny their opponents access to certain regions, they are unlikely to harm their own interests by disrupting traffic on the world’s oceans. Environmental ‘condition’ issues in the sea commons are disconnected from ‘access’ issues. No single international treaty or body addresses pollution, overfishing or the various challenges in the melting Arctic. A confusing patchwork of sea basin cooperation groupings, regional fisheries management organisations and pollution monitoring agreements is in place. The integrated marine policy of the EU recognizes the need to improve governance of the seas while avoiding treaty congestion. While no unifying treaty or body to manage maritime issues is likely to appear, years of patient discussion in a variety of venues (of the type that the EU excels at) may lead to greater coherence and cooperation in managing environmental threats. Air International air travel requires the use of national airspace for continuous transit and involves detailed agreements that define transit rights. The UN International Civil Aviation Organisation, established in 1947, is the leading institution for regulating air travel. All EU countries are members, while the EU has observer status. As with piracy at sea, any potential disruption of access to the air commons is likely to come from non-state actors. While terrorist events can disrupt air traffic, however, intergovernmental cooperation between national police and security agencies is well established. Any systemic threat to the air commons appears so unlikely that some security analysts do not even include air as a one of the commons. Also like the sea commons, issues of management of environmental ‘condition’ are disconnected from ‘access’ issues. The accumulation of greenhouse gases is a form of pollution of the atmosphere, but the alarm stems from their effects on the biosphere rather than from the risk that the atmosphere may become unbreathable or inaccessible. The EU is a global leader on climate change, with the world’s most comprehensive emissions trading scheme and intense efforts to regulate and limit emissions. The Union has set the tone at the international level but has been unable to win agreement for an internal carbon tax or stronger emissions targets from external partners. European Union Institute for Security Studies April 2013 3 Space More than a thousand orbiting satellites facilitate communications in both the military and the civilian spheres, regulated by a mix of UN guidelines, bilater- al Cold War agreements and industry standards. The UN International Telecommunications Union (ITU) allocates radio spectrum and satellite orbits and develops international technical standards. Established in 1869, the ITU has almost universal membership among existing states, including all EU countries - though not the EU itself. The 1967 Outer Space Treaty, signed by all spacefaring nations, provides the minimal framework for activities in space, banning weapons of mass destruction and preventing states from claims to celestial bodies. The Treaty does not establish infrastructure for coordination, and consultation among party states is ad hoc. Following China’s destruction of one of its own satellites in 2007, there has been increasing concern about protection of satellites from attack. During the later stages of the Cold War, the US and the USSR tacitly agreed to a moratorium on testing anti-satellite weapons (ASAT) - but there are no binding rules in place. The satellite’s destruction also created a debris cloud which could have damaged other satellites or spacecraft. Unlike the sea and air domains, the problem of debris management in space indicates an overlap between ‘access’ and ‘condition’ issues. While access to space has previously been limited to a small number of states, **the increasing role of new actors (including from the private sector) suggests that the creation of comprehensive and binding regulations for the space commons may become more difficult.** The EU has pushed to become a key actor in space matters, working with the European Space Agency (ESA) - an intergovernmental body - on Galileo, Europe’s civilian satellite navigation system. In an effort to get ahead of the curve and manage uncertainty, the European Council approved a voluntary Code of Conduct for Outer Space Activities in late 2008 (revised in 2010) to address both space operations and space debris. It has only limited operational requirements but develops important cooperation, consultation, and notification mechanisms. To make it more palatable to the US and other states, it is not binding and has no enforcement mechanism. As with many efforts in multilateral regulation of the global commons, the US has been hesitant to agree to the Code for fear of diminishing its own freedom of manoeuvre. It may be an important step, however, in setting the groundwork for future space cooperation if the EU can follow up on the Code’s development with diplomatic action by bringing other space-faring countries on board. Cyberspace Cyberspace differs from the other commons because it is not a physical domain and because of the preponderant role of the private sector in both the infrastructure and the management of the domain. All of the physical nodes of the internet also exist within states and are subject to national law, rather than existing physically outside of national control as for the other commons. The American and security-related roots of the internet are reflected in how technical internet standards are managed. The Internet Corporation for Assigned Names and Numbers (ICANN), a private non-profit entity under contract with the US government, has ensured the coordination of internet addresses and registries since 1998. While ICANN operations have been stable - and their inclusive governance style has won imitators for handling technical issues - many countries prefer a formal international body to manage technical internet issues. The ITU has been suggested as a neutral management body, but this idea has been resisted by most Western states. Interestingly, non-Western states are pushing for international management of the internet within a framework that provides individual countries with rights and roles, rather than leaving it to the nonprofit sector to decide how the internet works. All EU-27 countries are members of the ITU and, following a European Parliament deliberation, voted as a bloc against the measures granting more power to the ITU, concerned over states wishing to regulate, control, and limit internet use. The UN Internet Governance Forum (IGF) has become the leading multi-stakeholder platform for states and other actors to debate internet governance. Regardless of the ICANN/ITU issue, states can filter and censor within their territories, and for the time being, efforts to protect against cyber attacks remain within the national sphere. Cyberspace allows for the spread of information, creating pressures for transparency in both democratic and non-democratic states. Discussions on the management of cyberspace, therefore, have become connected with those on the power of states to control information. Finally, although there is no environmental constitu- ency for cyberspace, there are constituencies of users and providers - private and public - who play a similar role in pushing for the protection of certain conditions in cyberspace. Unlike for sea and air domains, therefore, there is overlap between ‘access’ and ‘condition’ discussants. With worries about Cold War-style espionage and cyber conflict between states, cyber security problems European Union Institute for Security Studies April 2013 4 QN-AK-13-017-2A-N | ISSN 2315-1110 are expected to grow worse and are unlikely to be addressed through multilateral fora. Problems with hackers of various types make problems of attribution, response and coordination of policing very difficult. Cyber conflict involving states will ebb and flow along with the quality of the relationship between those states and competing states will continue to test each other’s cyber defences.

#### The term global commons leads to a false sense of security when in actuality makes whatever is supposedly being protected exploited

**Clancy 98** (The Tragedy of the Global Commons, Spring 1998, <https://www.repository.law.indiana.edu/cgi/viewcontent.cgi?article=1136&context=ijgls> pecial Assistant to the Deputy Secretary of State, US Department of State, Indiana Journal of global legal studies)//HWLND

The inherent problem in this communal property is the idea put forth byGarrett Hardin in his 1968 article entitled The Tragedy of the Commons." Hardin theorized that in communal property systems, each individual enjoys the benefit of exploiting the resource to its maximum, while the cost of this increased utilization is spread out over all users. Consequently, there is incentive for individual over exploitation. Applying this theory to global expanses shows that "the disadvantage inherent in this doctrine is that nations are free to make maximum use of resources because no outside mechanism exists to force their acceptance of external costs, either the cost of resource degradation or the cost of resource depletion."'" Much like the herding commons depicted in Hardin's essay, global commons are susceptible to overuse. 19 This problem is indeed a serious one. Global commons become, in effect, a target for over exploitation. Moreover, critics have addressed the problems of free riders and the Prisoner's Dilemma in dealing with commons.2 " The end result is the same, however. These global commons fall victim to the predatory interest of individual exploiting nations.

#### Status quo efforts to remedy the space environment can solve Kessler syndrome – their impact is also overhyped and at best non-unique. Prefer our card’s probability analysis report and empirical examples

Lewis 15 [Hugh Lewis, Senior Lecturer in Aerospace Engineering. “Space debris, Kessler Syndrome, and the unreasonable expectation of certainty.” Room Space Journal of Asgardia. 2015. <https://room.eu.com/article/Space_debris_Kessler_Syndrome_and_the_unreasonable_expectation_of_certainty>] HW AL

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. On the face of it, there appears to be considerable procrastination or, worse, apathy towards the development of guidelines for debris removal in spite of calls for action. But is this really the case? This probability tree shows the possible outcomes from drawing two cards from a pack of 52 regular playing cards. It can be used to illustrate the difficulties accociated with the choice of which piece of space junk to remove. No progress? In the nine years following the publication of the work by Liou and Johnson **there has been considerable interest shown in remediation of the space environment. In particular, significant effort has been invested across the globe in the development of methods to remove objects from low Earth orbit.** The European Space Agency, for example, recently announced its intention to seek ministerial approval for a mission to deorbit a European spacecraft in the next decade. The Agency has conducted numerous studies to investigate appropriate and reliable methods to achieve this. A key driver for these widespread efforts has come from the work conducted using computer codes – evolutionary models – of the debris environment, which suggest that the growth of the debris population can be prevented if particular spacecraft or rocket stages are removed. In the computer simulations, these objects are identified as the most likely to collide and so the consequence of their removal in reality should be a reduction in the number of collisions that will occur in the environment, which would curb the generation of new fragmentation debris. Given that is has been nearly a decade since the publication of the work by Liou and Johnson, it is surprising to some that no guidelines have yet been introduced at the international or national level, which detail the remediation measures that can be taken by government and industry. In fact, a recent announcement by NASA of a focus on technology development rather than in-flight demonstrations of debris removal technologies was greeted with some criticism. On the face of it, there appears to be considerable procrastination or, worse, apathy towards the development of plans or guidelines for debris removal in spite of calls for action. But is this really the case? The real issue comes from the seemingly simple task of identifying the correct debris to remove from orbit … In fact, the situation is not as simple as it might appear; there are some fundamental questions that remain to be answered about debris removal. Of particular concern are issues relating to ownership, liability and transparency. Many of the technologies that have been put forward for debris removal could also be used to remove or disable an active spacecraft, for example. Hence, it can be argued that these technologies could be used as weapons. There are also questions about the cost of a sustained programme of debris removal – some engineers put it at tens of trillions of dollars. However, perhaps the most important reason for the lack of relevant guidelines is that we don’t yet know how to accomplish remediation, by which we mean cleaning up space, in practice. That is not to say that we don’t know what technologies we might need. As mentioned above, there has been considerable effort already expended towards understanding these requirements and moving the necessary technology forwards. For one-off use, some technologies are very nearly ready. The real issue comes from the seemingly simple task of identifying the correct debris to remove from orbit. Until we can solve this problem, the likelihood is that debris remediation will not succeed, the debris population will continue to grow – seemingly out of our control – and the attempt will come at great cost. Without the reasonable expectation of success, it is virtually impossible to define appropriate and robust guidelines that can be used to direct remediation endeavours.

#### Extinction outweighs structural violence

Bostrom 12 (Nick, Professor of Philosophy at Oxford, directs Oxford's Future of Humanity Institute and winner of the Gannon Award, Interview with Ross Andersen, correspondent at The Atlantic, 3/6, “We're Underestimating the Risk of Human Extinction”, <http://www.theatlantic.com/technology/archive/2012/03/were-underestimating-the-risk-of-human-extinction/253821/>)

Bostrom, who directs Oxford's Future of Humanity Institute, has argued over the course of several papers that human extinction risks are poorly understood and, worse still, severely underestimated by society. Some of these existential risks are fairly well known, especially the natural ones. But others are obscure or even exotic. Most worrying to Bostrom is the subset of existential risks that arise from human technology, a subset that he expects to grow in number and potency over the next century.¶ Despite his concerns about the risks posed to humans by technological progress, Bostrom is no luddite. In fact, he is a longtime advocate of transhumanism---the effort to improve the human condition, and even human nature itself, through technological means. In the long run he sees technology as a bridge, a bridge we humans must cross with great care, in order to reach new and better modes of being. In his work, Bostrom uses the tools of philosophy and mathematics, in particular probability theory, to try and determine how we as a species might achieve this safe passage. What follows is my conversation with Bostrom about some of the most interesting and worrying existential risks that humanity might encounter in the decades and centuries to come, and about what we can do to make sure we outlast them.¶ Some have argued that we ought to be directing our resources toward humanity's existing problems, rather than future existential risks, because many of the latter are highly improbable. You have responded by suggesting that existential risk mitigation may in fact be a dominant moral priority over the alleviation of present suffering. Can you explain why? ¶ Bostrom: Well suppose you have a moral view that counts future people as being worth as much as present people. You might say that fundamentally it doesn't matter whether someone exists at the current time or at some future time, just as many people think that from a fundamental moral point of view, it doesn't matter where somebody is spatially---somebody isn't automatically worth less because you move them to the moon or to Africa or something. A human life is a human life. If you have that moral point of view that future generations matter in proportion to their population numbers, then you get this very stark implication that existential risk mitigation has a much higher utility than pretty much anything else that you

CUT THE CARD

could do. There are so many people that could come into existence in the future if humanity survives this critical period of time---we might live for billions of years, our descendants might colonize billions of solar systems, and there could be a billion and billions times more people than exist currently. Therefore, even a very small reduction in the probability of realizing this enormous good will tend to outweigh even immense benefits like eliminating poverty or curing malaria, which would be tremendous under ordinary standards.

# 2NR

## Case

#### 1] Concede the first 3 arguments on solvency we’re going for circumvension- they can’t just fiat whatever they want to, we are meant to debate the effects of the plan and fiating that private companies are gonna do whatever is ridiculous, you can fiat something policy but not private actors and that’s a voting issue

#### 2] THEY HAD no evidence against backlash- this was a pure analytical argument and it was bad, you should be comfortable knowing that backlash would be a thing

#### 3] No Kessler impact and that impact D in the 1NC went totally conceded so we only have to play defense on the capitalism inequality impact

#### 4] We already read a magnitude outweighs struc viole so take our impacts first but we’ll still explain- probability comes first because anything could be of high magnitude EXPLAIN

5]

### OV – Colonization

#### Space innovation is a key factor and you should approach public space exploration with caution- innovation is high and private companies are necessary to drive the innovation we need- public firms like NASA can’t do the same because they don’t provide that competition. Ask yourself who invented resuable rockets and also ask yourself what happened going from the moon to the space shuttle to the international space station. NASA is failing. We are on the verge of colonization via corporations but the plan stops us- I’ll explain on the line-by-line

### AT: Space Philanthropy False

#### Reject their critical approach- we don’t link to it and there’s several reasons why:

#### 1] Space companies are working with NASA- that itself checks. It means that NASA is going to regulate much of what space companies are doing and their argument about space companies being in it purely for monopolistic gain is false

#### 2] The argument that “space philanthropy” is false is untrue- most of SpaceX and Blue Origin’s projects have some sort of bind or deal with the government, which means this is the best of both worlds- you get the competition private companies provide and the correct incentive from NASA

#### 3] No link to their K- there’s several reasons for inequality and private space companies aren’t the only one. Our model of colonization and primacy is necessary because it is the most effective- governments have failed- you should trust us not because our authors might be epistemologically correct, but because this is a fact. Any denial of NASA’s blunders would not be epistemologically incorrect- it would be denial of the truth

#### 4] They say that profit motives don’t align with the rest of the world- that’s just untrue. Innovating in space and colonizing is what NASA and SpaceX have been working together to do, and there is no downside to that- any refusal at this point links to the disad. Companies, yes, are going for “unlimited gain”, but they walk the line of exceeding that into monopolistic dominance because NASA regulates it and checks

The argument on you not actually stopping innovation is horrible- it contradicts with ANY of your other offense- you say that you allow private companies to go to space still and do things via earth but that STILL STOPS innovation, private companies need to BE IN SPACE doing the work for anything to link

Prob outweighs was answered by offense above

#### **Government space innovation is a massive failure- despite their massive funding, NASA has blundered over the past 3 decades**

Chapman 16 Philip Kenyon Chapman was the first Australian-born American astronaut, serving for about five years in NASA Astronaut Group 6. “The Failure of NASA and a Way Out.” Spacedaily.com, 2016. https://www.spacedaily.com/news/oped-03zn1.html.

I was in Mission Control when Neil Armstrong announced that the Eagle had landed. The applause was unexpectedly muted as we were all overwhelmed by the significance of the moment. Nobody had any doubt that Tranquility Base was the first step in an expansion into space that would drive human progress for centuries to come. We had of course all seen the 1968 Kubrick/Clarke movie 2001: A Space Odyssey, and the facilities depicted there seemed entirely reasonable. In our lifetimes, we expected to see hotels in orbit, translunar shuttles operated by commercial airlines, and settlements on the Moon. Only the alien monolith was questionable. None of this has happened. Despite cutbacks, NASA has spent a total of $450 billion since Apollo 11 (adjusted for inflation to 2003 dollars). That very large sum was more than enough to fund the developments that Wernher von Braun predicted for the end of the 20th Century, but we have not even started on any of them. If it had been spent wisely, as seed money to stimulate commercial development, we could have established a growing, self-sustaining extraterrestrial enterprise, offering opportunities for thousands of people to live and work off Earth - but the sad truth is that we have less capability in human spaceflight now than in 1970. In 1969, we landed on the Moon, but now we cannot leave low Earth orbit (LEO). NASA claimed that the shuttle would be fifteen times cheaper to fly (per pound of payload) than the Saturn vehicles used in Apollo, but it is actually three times more expensive. The average cost of each flight is a staggering $760 million. After a mission, the time required to prepare a shuttle for the next flight was supposed to be less than two weeks, but in practice tens of thousands of technicians spend three to six months rebuilding each "reusable" shuttle after every flight. Worst of all, the shuttle is a needlessly complex, fragile and dangerous vehicle, which has killed fourteen astronauts so far. In 1973, we had a space station called Skylab, with berths for three astronauts. NASA let it reenter and break up over Western Australia. A second Skylab was built, which could have become the Earth terminal of a lunar transportation system. It is now a tourist attraction at the Air and Space Museum in Washington, and the Saturn V to launch it is nothing more than a monstrous lawn ornament, moldering on its side at Johnson Space Center (JSC). Now we are building the International Space Station (ISS), which is still incomplete after twenty years of effort. Its orbital inclination, chosen for political reasons, makes it useless as a base for future missions beyond Earth. In the original design, the ISS had a crew of six or seven, but cost overruns have forced deletion of a habitation module and a lifeboat that could return that crew to Earth in emergency. The shrunken station, called "core complete," will accommodate only three astronauts (who will use a Russian Soyuz as a lifeboat). In normal operations, only one of the crew will be American. The cutbacks gutted the research program, by eliminating much of the scientific equipment aboard the station, reducing the scheduled shuttle flights in support from six to four per year, and leaving the small crew with very little time to spare from housekeeping tasks. If there are no unusual maintenance problems, the lone American may average 90 minutes per day working on the research that is the alleged purpose of the facility. He or she will conduct experiments by following a checklist, because the small crew precludes specialists in relevant disciplines. The scientific program is thus perfunctory at best, with rote experiments of a kind that might win prizes at a high school science fair. (2) The life-cycle cost of the ISS, including development expenses and shuttle flights, amounts to at least $8 billion per year (2003 dollars). This is 60% more than the entire budget of the National Science Foundation, which supports thousands of earthbound scientists. US taxpayers have a right to expect that such expensive research will be of a quality that wins Nobel Prizes, but what we are actually getting are pro forma experiments that occupy a small fraction of the time of one person. The cost is preposterous: it amounts to nearly fifteen million dollars ($15,000,000!) for each hour of scientific work by the American crewmember. NASA has no chance whatsoever of convincing scientists that this is a reasonable allocation of scarce research funds. Until the Columbia accident, NASA had expected 4 shuttle flights per year to the ISS, and one more for missions unrelated to the station (e.g., to lower inclination). Now the shuttle may be restricted to orbits in the same plane as the ISS, so that the shuttle can go dock there if it is damaged during launch. In any case, present plans call for operation of the ISS until at least 2016, so there will be at least 65 more shuttle flights (5 per year). Based on experience to date (two shuttles lost in 113 missions), the accident probability is a little less than 2% on each flight. Astronauts may accept this risk because there is no other way to fly in space, but they would of course prefer a safer system. As a matter of public policy, however, only a compelling national interest can justify so hazardous a venture. The ISS presents no such necessity. With these odds, the probability of losing at least one more shuttle during the life of the ISS (i.e., in 65 flights) is nearly 70%. In other words, NASA is gambling its future, and the lives of astronauts, on a program that has less than one chance in three of avoiding disaster. This is like playing Russian roulette with a revolver in which four out of the six chambers are loaded. Only a suicidal lunatic would accept such a proposition. After wasting three decades (and a perfectly good Cold War), frustrating the dreams of a whole generation of space enthusiasts, and spending hundreds of billions of dollars, NASA's net achievement is a space station that has no definable purpose except to serve as a destination for shuttle flights. We would not need the shuttle missions if we did not have the station, and we would not need the station if we did not need something for the shuttles to do. The entire human spaceflight program has thus become an exercise in futility. The lack of progress has not been due to insufficient funding or to technological problems, but to a series of blunders by NASA management. NASA engineers did not understand the popular enthusiasm aroused by Apollo. They thought the Giant Leap for Mankind was not the lunar landing itself, but the technological prowess it displayed. This led to the mistaken inference that the way to maintain popular support, and hence generous funding, was to propose megaprojects of great technical complexity, regardless of whether they were intrinsically interesting. They are surprised and disappointed that the public are unimpressed by the shuttle and ISS, despite their technical virtuosity. The Giant Leap delusion persists today, in the form of proposals for a flags-and-footprints mission to Mars. In reality, of course, Apollo existed because Jack Kennedy and Nikita Khruschev chose to make space a principal arena for competition between the superpowers. The purposes of the program were to overcome the perceived Soviet lead in space, and to foreclose the possibility that the USSR would reach the Moon first and claim it as Soviet territory. No Congress was willing to spend more than the minimum needed to achieve those objectives. The Outer Space Treaty of 1967 relieved concerns about Soviet hegemony by banning weapons and territorial claims on the Moon. This allowed Congress to respond to Lyndon Johnson's simultaneous expansion of social programs and the war in VietNam by slashing funding for NASA. As shown in Figure 1, the budget peaked in 1966, and then fell precipitously. Despite these obvious trends, NASA developed grandiose visions of the post-Apollo program, which culminated in the Space Task Group Report of 1969. (3) The STG proposed three options. The most ambitious called for a reusable Earth-to-orbit shuttle and a small space station by 1975; a reusable orbit-to-orbit tug and a lunar orbit station in 1976; a nuclear-powered tug and a lunar surface base in 1978; a 50-man space base in Earth orbit in 1980; a manned Mars mission in 1981; and expansion of the Earth orbit space base to 100 people by 1985. The other options retained all these objectives, but reduced the cash flow by delaying some of them for up to five years. Figure 1 also shows the funding profiles required by the STG proposals (in 2003 dollars). Richard Nixon responded immediately, making it perfectly clear that the whole STG Report was sheer fantasy, and that NASA should expect less money, not more. Given this fiscal reality, NASA could have adopted an incremental approach to space development. The obvious plan was to launch the second Skylab, with minor modifications to permit a long life on orbit, and to support it initially with a simple ballistic capsule (such as a proposed stretch of the Gemini capsule, called the Big G, which could carry seven to nine people) atop an expendable booster. In time, a small reusable orbiter would replace the capsule, and the booster could eventually become reusable too. Beyond that, the scope of the program would depend on funding, but might include a permanent lunar base. This plan was unacceptable because it had two dreadful defects. First, it involved a series of small, affordable steps, instead of the Giant Leaps that many in NASA thought essential to public support. The second and much worse problem was that Skylab was a project run by Marshall Spaceflight Center in Huntsville, Alabama, and not by JSC. As JSC Deputy Director Chris Kraft said, people in Houston believed that "being in charge of manned spaceflight was their birthright," and they resented Marshall's intrusion. Kraft once told me that a space station was unnecessary, because the shuttle would be so cheap that astronauts could commute to orbit, returning home every evening. The claim that the shuttle would be cheap was based on an economic model that was totally divorced from reality. It assumed that the shuttle would fly 60 times per year, so that fixed costs could be amortized over many missions, and that the direct operating cost would amount to less than $250/pound (2003 dollars). If these estimates had proven correct, we would have flown the shuttle 1500 times by now (and presumably would have killed about 200 astronauts). The worst mistake made by NASA managers was that they allowed disputes over who would be in charge to influence the direction of the program. Their preoccupation with intercenter turf wars obscured the writing on the wall. The real lesson of the STG debacle was that a healthy program was not sustainable if funded only by taxpayers. NASA could retain exclusive control of an insignificant, moribund program, or it could accept a supporting role in a growing program, funded by investors and controlled by entrepreneurs. Given these options, NASA chose the first - but instead of doing the best it could with limited funds, it dissipated its resources in the care and feeding of the white elephants called shuttle and ISS. The end of the Cold War has intensified the need to engage the engines of free enterprise. Absent a dire national exigency like the Soviet threat, NASA must compete for funding with other uses for the Federal dollar, and many of them are much more urgent. The NASA budget has therefore shrunk to well below 1% of Federal outlays, and there is virtually no hope of any significant increase. Sustained growth is possible only in the private sector, where it is seen as a boon to the economy. Apart from other issues, the purpose of human spaceflight is to open the solar system to all of us, not just to civil servants. The appeal of the program depends on the perception that it is opening a new frontier where people can escape the increasing regulation of life on Earth. A centrally-planned, government-run program is incompatible with that vision. It cannot survive, because it contradicts a principal reason for popular support. There are many other advantages to transferring responsibility for human spaceflight to private enterprise: Commercialization could convert the program from a Federal expense to a source of tax revenues. Corporations can grow exponentially because of positive feedback of profits from investments, a mechanism that is unavailable to NASA. Corporations can make rapid progress because they can take risks that government agencies cannot. A growing commercial program would create the constituency needed to avoid further cuts in Federal funding. Human spaceflight can be a potent demonstration of US leadership, but the current NASA program sends the wrong message to nations struggling with the transition from command economies to democracy and free enterprise. The extraterrestrial economy will be like that in Hawaii, where tourism and the export of pineapples are important industries, but not the reason most people live there. The gross Hawaiian product depends primarily on trade between residents. Similarly, space entrepreneurs may begin by exporting goods and services to customers on Earth (the most promising candidates are space tourism and electric power from solar power satellites), but the real growth phase will begin when trade between people living and working in space generates a significant fraction of corporate revenues. The principal barriers to expansion into space are firsty: the high cost of launch to orbit; secondly: actions by NASA that suppress competition from the private sector (4); and thirdly: a regulatory environment, especially in the UN General Assembly, in which capitalism and competition are seen as regrettable aberrations that we should leave behind as we venture out into the universe. These are all correctable, but not within the institutional culture that has taken root in NASA. How to Fix It First of all, we must recognize explicitly that NASA has bungled human spaceflight. There have been many suggestions for reform of the agency, and none of them has worked. The only viable solution is a new Federal organization, one that sees its purpose as helping the private sector rather than flying space missions. For convenience, I refer to it here as the Advisory Committee for Commercial Enterprise in the Solar System (ACCESS). NASA's predecessor, the National Advisory Committee for Aeronautics, was a research organization that provided much of the knowledge base that brought us from the Wright Flyer to the Boeing 747 in 65 years. NACA did not try to run airlines. ACCESS should provide analogous services for human spaceflight. There will be plenty for ACCESS to do. The proper functions of government include: support for development of enabling technology; sponsorship of facilities such as simulators and test chambers, available for rent by anybody; funding for exploration and scientific research; utilization of Federal buying power in creating initial markets for products and services; subsidies and tax breaks aimed at overcoming barriers to investment; development of a legal framework for acquiring, regulating and protecting property and other rights in space; negotiations leading to international agreements that benefit US industry; law enforcement; search and rescue; traffic and debris control; protection of fragile environments in space; military applications of space technology; and provision for the security and, if necessary, the physical defense of US space assets and interests, public and private. Some of these functions may require military personnel in space, but there is no need to transfer them from the USAF, USN or Coast Guard to a civilian agency. Any civil missions the government feels it needs should be flown in commercial vehicles by astronauts who are employed by contractors. I recommend the following specific steps: Ground the remaining three shuttles permanently, as too dangerous and expensive to fly. Mothball the ISS and move it to higher orbit, where it is safe from reentry, citing the lack of shuttles as the excuse. Perhaps somebody will eventually find a real use for it. Set up ACCESS as an agency entirely independent of NASA, perhaps reporting through the Department of Commerce. Remove the line items for the shuttle and ISS from the NASA budget and use the money about $5.5 billion per year (5) to fund ACCESS. Have ACCESS provide immediate financial incentives for private development of human spaceflight, including economical launch vehicles (6) and corporate operations in space. Provide office and lab space for ACCESS at JSC in Houston, and transfer test facilities and selected NASA personnel to the new agency. Eventually, JSC will become a center run entirely by ACCESS. Phase out other human spaceflight activities in NASA over a five year period, and transfer the funding to ACCESS. NASA will be left as a smaller agency, focusing on aeronautical research, unmanned spacecraft and the space sciences. A reform of this magnitude is possible only by legislative fiat. NASA will of course fight it by every means available, but perhaps the Congress will take the necessary action once it is realized that transfer to the private sector can make human spaceflight a source rather than a sink for tax revenues.