### Off – K – Tech Variant

#### Behold the next frontier of New Space – not only is space the project of humans to house the next generation, but the project of the AC is a humanist project that drives forward racial capitalism. This centers the human perspective on technology that traps knowledge production for the sake of “exploration” while just exploring better ways to exploit people. This new age of exploration has empirically shut out actual exploration instead to favor financialization and a governance of disappearance.

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The 2010s may very well be remembered as **the ‘Age of NewSpace'**, the decade when outer space was **turned into a capitalist space**, when private corporations pushed the price of launches, satellites, and space infrastructure downwards, exerting what industry insiders call the ‘SpaceX effect' (Henry, 2018), **centered on the technological achievement of ‘reusability'**, recovering used rocket boosters for additional launches, promising to drastically reduce the price of going to space (Morring, 2016). As one report observes, ‘Not only has the number of **private companies engaged in** space exploration grown remarkably in recent years, these companies are quickly besting their **government-sponsored competitors'** (Houser, 2017). What the rockets, shuttles, ships, and landing pods will carry beneath their payload **fairing** or **in their cargo hold**, however, along with supplies and satellites, is **the capitalist worldview**, a particular ideology—just as Robinson Crusoe, in Marx’s ironic retelling in Capital, ‘having saved a watch, ledger, ink and pen from the shipwreck…soon begins, like a good Englishman, to keep a set of books' (Marx, 1976, p. 170), brings with him English political economy—'Freedom, Equality, Property and Bentham', as Marx (1976, p. 280) says elsewhere— to his desert island. In early 2018, astronomers across the world learned that a New Zealand start-up, Rocket Lab, which aimed to launch thousands of miniature satellites into orbit around Earth (so-called ‘smallsats'), had planned to launch a giant, shining ‘disco ball'—the ‘Humanity Star'—into orbit around Earth. It was an elaborate marketing stunt **masked by humanistic idealism**. ‘No matter where you are in the world, or what is happening in your life', said Rocket Lab CEO Peter Beck, ‘everyone will be able to see the Humanity Star in the night sky' (Amos, 2018). Many astronomers expressed outrage at these plans, fearing that the light from the Human Star would threaten their ability to carry out scientific observations. **But** while these **astronomers were** incensed by the idea of a bright geodesic object **disrupting their ability to carry out observations**, concerns with the effects of the arrival of capitalistkind on their ability to collect data were non-existent. The astronomical community was angered by the idea of a material, concrete, visible object polluting “pure” scientific data, but it paid less attention to the (invisible and abstract) recuperation of the night sky as it was brought into the fold of capitalism. In an interview, Beck was quizzed about the Humanity Star and asked by a reporter about the difficulties of generating profits in space (Tucker, 2018). To this Beck replied, ‘**It has always been a government domain**, **but we’re witnessing the democratization of it**…[I]t [is] turning into a commercially dominated domain'. Beck established an equivalence established between **the dissolution of space** **as** **the** rightful **domain of states** and the advent of profitmaking ventures as signs of ‘democratization'. In space, according to Beck’s logic, democratization **involves the disappearance of the state and the rise of capital**. The argument, of course, is impeccably post-statist: on this account, states are monolithic, conservative Leviathans beyond the reach of popular control; corporations, on the other hand, are in principle representatives of the everyman: in the age of the start-up, any humble citizen could in theory become an agent of disruption, a force for change, an explorer of space, and a potential member of the cadre of capitalistkind. Following this logic, **the question** for the entrepreneurs of NewSpace **is how to monetize outer space**, which means turning space into a space for capital; their question is how they can deplanetarize capital and universalize it, literally speaking, that is, turn the Universe into a universe for capital. In this light, Peter Beck’s distortion of democratic ideals appears eminently sensible, **equating democratization with monetization**, that is, capital liberated from its earthly tethers.

### Link – Debris – Hunter and Nelson 21

#### Discourse of debris in space leads to a form of risk management specific to racial capitalism. The 1AC project may say it lessens debris but that is a form of debris management focusing on New Space and securitizing further space exploration. Debris rhetoric historically shuts out opinions from others because it is seen as the ultimate evil.

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Inequality and Orbital Debris Despite their occurring “out there,” many materially impactful activities in orbital space—such as satellite launches, spaceflight, and space-based astronomical observation—produce social and environmental inequalities. **Engagements with debris** are inextricably linked to the modern market economy, **rely upon racial capitalism, and perpetuate** transnational **environmental inequalities** (Pellow 2007; Pulido 2017). **The** creation and **management of debris objects and the** placement and **operation of their** associated **industries contributes to global** economic, **racial**, and environmental **injustice**s (Klinger 2019). In turn, **these inequalities shape knowledge production** and inform imaginations of orbital space and debris. **The idealistic imagination of space** as a common resource for humankind (UNOOSA 1967) **is** **waylaid by** global political economy and **racial capitalism such that** orbital space and **debris cannot be removed** from a consideration of the inequalities inherent in terrestrial life (Collis 2017; Pulido 2017). Many outer space activities require access to an upper echelon of capital and power, **where stakeholders craft** core **narratives that shape** contemporary **engagements with** orbital space and **debris** objects around hegemonic ideologies (Genovese 2017). If we wish to understand orbital debris in their entirety beyond such narratives, **we must** **consider** orbital **debris in relation** **to** geographies of **global power**. The reentry of Cosmos 954, a Soviet intelligence satellite that fell over the Great Slave Lake area of the Northern Territories in Canada in 1978, has been well studied (e.g., Parks 2012; Power 2018; Power and Keeling 2018; Rand 2016, 2019) and is a revealing case when it comes to considering inequality and orbital debris. Though no one was directly harmed by the initial impact, the satellite's nuclear reactor prompted a governmental effort to recover and dispose of the potentially radioactive debris scattered over 30,000 square miles (Parks 2012). **Despite** **official reports claiming** that the **debris posed no** significant **risk to humans** or nature, Ellen Power's (2019) **interviews with Dene** and Métis **communitie**s in the vicinity of the crash **reveal** that they have **ensuing fears** about lingering satellite debris and radioactivity. **This has impacted** their traditional **use of the land**, as “the Dene fish and trap in almost every square mile of this area … there is no place where the debris fell which is not used by the Dene” (Erasmus 1980, in Power 2019: 41). One interviewee explained that she still “washed all the berries she picked before she ate them, just in case there might still be debris resting on the plants” (Power 2019: 49). Such anxieties are compounded by an understandable mistrust of Southern authority and a lack of follow-up after the initial cleanup operation (Power 2019). The background contamination of the crash site, caused in part by routine toxic externalization into this region (see Hird 2016), has made it difficult to discern the exact source of **increased levels of illness** since the crash (Power 2019). Considering orbital debris in the context of reentry (i.e., not just debris in orbit, but that have been in orbit), reveals how they are defined in relation to place. Though Cosmos 954 fragments were seen as a potential threat to humans and animals by the Canadian government, this risk was downplayed due to the colonially imagined “emptiness” of the Canadian North (Hird 2016; Rand 2019). Official reports and media presented satellite fragments as somewhat “in place” in the Northern Territories—somewhere that “stoically and harmlessly absorbed the nuclear detritus of Cosmos 954” (Rand 2019: 90). Though these reentered debris did not fall in the Pacific Ocean—the usual destination for earthbound orbital objects (De Lucia and Iavicoli 2019)—the Arctic, the deep sea, and outer space are similarly imagined through colonial logics as empty and lifeless (Collis 2017; Klinger in Dunnett et al. 2019; Rand 2016, 2019). The impact **of** this **colonial** geographical **imagination** on the perfunctory American–Canadian cleanup effort was well summarized by a community member who asked, in Chipewyan: “Would the government have done more if the satellite had fallen in the middle of Toronto?” (Knight 1978, in Rand 2019: 90). For these communities, debris are not innocuous or trivial, but deeply out of place and ongoing threats to their lives and land (Power 2019). Responses to Cosmos 954 demonstrate how different actors carry their geographical imaginations into practice, as well as how these imaginations can perpetuate inequalities. Reentry events also draw attention to other externalities of the space industry (Gorman 2011). The material externalities of orbital objects are not limited to orbital space, and the terrestrial burden of outer space activities is not equally shared. For instance, scholars have noted the unequal geographies of **rocket launch sites**, which **are** often placed in areas inhabited by marginalized communities (Gorman 2005; Klinger 2019; Kopack 2019; Redfield 2000). The people and environments in the proximity of launch sites are at risk from toxic and material fallout, and the placement of such operations often follows the strategic, **racist** geographies of **sacrifice zones** (Klinger 2019). This refers to the geographical “pattern of environmental injustices in which low-income and minority populations are at greater risk of being exposed to health destroying toxic chemicals” (Lerner 2010: 297), often the toxic fallout of corporate or state activities. For example, the land that surrounds the Baikonur Cosmodrome in Kazakhstan is in ecological crisis following thousands of rocket launches, something that Robert A. Kopack argues “continue[s] [the] historical disposability” (2019: 560) of this landscape and its inhabitants. Additionally, Daniel Sage (in Dunnett et al. 2019) has highlighted the uneven labor geographies of the space industry, in which private commercial endeavors such as SpaceX rely on an increasingly nonunionized, precarious workforce. Understanding the externalities of outer space industries in the context of power and injustice is essential for postulating a departure from hegemonic considerations of orbital debris and their impacts.

**That props up The World Computer which will culminate in extinction – thats root cause and this ow and turns case**

**Beller 21**

Beller, J. (January 22, 2021). The World Computer: Derivative Conditions of Racial Capitalism. United States: Duke University Press. Pages 5 to 11. // js69 --- Ask me for the PDF!

The wealth of societies in which the **capital**ist mode of production prevails **appears as** an immense collection of **information**; the individual bit appears as its elementary form. Or so it appears to the machines that count, the machines of account. Moreover, the rise of information meant—in fact is— the ability to write a derivative contract on any phenomenon whatever. Its emergence is one with the calculus of probability and thus of risk. What price information? We will show here how information becomes a derivative on reality whose importance comes to exceed that of reality, at least for those bound by the materiality of information’s risk profiles. Furthermore, the algorithm becomes the management strategy for the social differentiation introduced by and as information— a heuristic, becoming bureaucratic, becoming apparatus for the profitable integration of difference and, significantly, for any “us” worthy of that name, of that which and those who could be differentiated. The algorithm’s calculative execution on information, its “procedural” problem solving, was called forth and derived from the market optimizationof the socially meaningful metrics (things somehow or other worth measuring) of difference. Recursively, the algorithm and its avatars multiplied its capacities of differentiation. With its Boolean operators, and later with pattern recognition, algorithmic execution on socially derived information effects a tranching of the world that also shatters prior social narratives and ontologies, and allows for the placing of contingent claims on any tranche whatever without regard for the rest. How much does it cost to ship a slave? Insurance policies for slave traders? Reparations for proprietors of slaves? Predictive policing? For racial capitalism, Blackness becomes a junior tranche. The third world becomes a junior tranche. The global South becomes a junior tranche. All subprime, all the lowest tranche of a security, the one deemed most risky. “Any losses on the value of the security are absorbed by the junior tranche before any other tranche, but for accepting this risk the junior tranche pays the highest rate of interest” (Curtis). The brutal divide and conquer approach, on a continuum with the separation imposed by **racial cap**italist pursuits **from set**tler **col**onialism, factory barracks and camps, to workplace alienation and Debord’s spectacle, effected the capacity to isolate certain phenomenon and then bet on the value of the outcomes while externalizing every other concern. Here too we find the distinction between signal and noise is in the first place a matter of **political economy** and its racism. The slow nuclear bomb that is the COVID-19 pandemic is but a case in point in the terrible unfolding of what one may hope is still pre- history **manifest** as **racial capitalism**. It is a consequence of the convergence of the global demos being relegated to noise, to “the poor image” (Steyerl 2012: 31–45), to volatility by the global compute. The virus is not just information on a strand of ge ne tic material, and should not as Ed Cohen warned us years ago, be treated fetishistically, as if it were itself the cause of global suffering (Cohen 2011). Viruses are everywhere— the **global pandemic** is **symptomatic of** world- **system**ic **failure** on many fronts: health care provisioning and access, economic in equality, agribusiness, social hierarchy, racism, etc. Individual bodies are made precarious by a matrix of financialized “information” that differentiates among us while externalizing whatever might be left of our pre- existing conditions that could all too briefly be summed up as our real interests or even our ecological concerns— our connection to the bios in the broadest sense. We are **subjected to** and by a continuous **for- profit reformatting** by the various systems of mediation that **overcode** us as **problems** to be solved— including by the regimes of all the “estates:” the fourth estate that is “the press,” and particularly a fifth estate that has in fact absorbed all the others for its own calculus, namely “computation.” We observe that the reigning global calculus of profit, though **invented** **by** no one in particular, everywhere seeks to extract our value and mostly benefits those who believe in theory or in practice that they are shining examples of a **superior race**. Those who have almost unlimited access to the social product, and to us, to our information, to our time. How does this sense of superiority, of the greatness of our oppressors, come about? From their harvesting the outputs of the rabble and their self-satisfied accession to the violence necessary to keep us down. Most recently, the global compute has involved off- loading systemic precarity onto individuals and where possible onto entire peoples to the point, just reached in 2020, when that strategy itself created radical systemic instability: causing deaths that will likely be in the millions, and not incidentally threatening global “depression.” Well, one person’s, or one people’s, Armageddon is another’s depression—or their joy. The algorithmic optimization of society for profit, an economics that, while sometimes unconscious, is these days never too far from the conscious mind of the creators of specific programs, collectively effects a wholesale compression of the sociosemiotic into what Friedrich August von Hayek (1945: 14) precisely called “a system of telecommuncations” capacitated by what he grasped as effectively the price signal. Money, or what, in a different key, Alfred Sohn- Rethel (1978: 28) perceived as exhibit A of “real abstraction,” relegates, wherever possible, everything else to noise.1 The “noise” of course, is the source of volatility. The suppression of noise is from the standpoint of communication theory a technical matter. Here we understand it as a matter of politics and economy. Noise suppression directly correlates to people’s **oppression**. **In** financial terms, volatility is a similar index— **the expression**, **in** prices, of **decision making under** conditions of **uncertainty**. Ironic then that volatility has become a major source of value creation for synthetic finance, and now for states. The U.S.’s Corona bailouts of over three trillion US dollars— responses to the volatility of the social rendered ever more precarious by the existing economy— represent more than 60 percent of the money ever issued in the history of the country. What perhaps best characterized this period is a full- blown convergence of communication, information and financialization as computation; whether or not this convergence and all its incipient violence can be redesigned is an open question. This question is ultimately about a possible politics of the **protocol**ization of these informatic networks within a literally universal system of computation that **as** hypostatic states looks like a virtual machine, what I here call **the world computer**, and as diachronic flow (processing) is nothing less than economic media. Can these formations that for their proprietors profitably collapse message and value be hacked or reprogrammed so that the command control centers that make the most (from) difference are not in the hands of racist plutocrats—do not in fact produce them? That question, though addressed in this volume will be taken up more fully at a later date, with a particular focus on the how and the who.2 Here in this book we consider the various social vectors and components sedimented into machine function and then reactivated by the dire co- articulation **of racial** capitalism and **computation**— rearticulated as computational racial capitalism and its virtual machine, the world computer. Information as Real Abstraction Taking the notion that **Capital was always** a **computer** as a starting point (Dyer- Witheford, 2013), **The World Computer** understands the history of the commodification of life as a process of encrypting the world’s myriad qualities as quantities. Formal and informal techniques, from double- entry bookkeeping and racialization, to the rise of information and discrete state machines, imposed and extended the tyranny of racial capital’s relentless calculus of profit. By means of the coercive colonization of almost all social spaces, categories, and representations— where today language, image, music, and communication all depend upon a computational substrate that is an outgrowth of fixed capital— all, or nearly all, expressivity has been captured in the dialectic of massive capital accumulation on the one side and radical dispossession on the other. Currently the money- likeness of expression— visible as “likes” and in other attention metrics that treat attention and affect as currency—is symptomatic of the financialization of daily life (Martin, 2015a). All expression, no matter what its valence, is conscripted by algorithms of profit that intensify in equality by being put in the ser vice of racial capitalism; consequently, we are **experiencing** a near- apocalyptic, **world- scale failure** to be able to address global crises including migration for reparations, carceral systems, **genocide,** **militarism**, climate racism, racism, pandemic**, anti- Blackness, extinction**, and other geopolitical ills. The **colonization of semiotics** by racial capital has **rendered all “democratic”** modes of **governance** outmoded save those designed for the violent purpose of extracting profits for the **enfranchised**. Culturally these modes of extraction take the form of fractal fascism. An understanding that informationalized semiotic practices function as financial derivatives may allow for a reimagining of the relationship between language, visuality, and that other economic medium, namely money, in an attempt to reprogram economy and therefore the creation and distribution of value— and thus also the politics and potentials of representation. In what would amount to an end to postmodernism understood as the cultural logic of late capitalism, our revolutionary politics require, as did the communisms of the early twentieth century, a new type of economic program. In the age of computation, putting political economy back on the table implies a reprogramming of our cultural logics as economic media for the radical redress of the ills of exploitation and the democratization of the distribution of the world social product. Sustainable **communism requires the decolonizaton** of abstraction and the remaking of the protocols of social practice that give rise to real abstraction. Though in this section we will more narrowly address the issues of money, race, and information as “real abstraction,” and their role in computational racial capitalism, we note the overarching argument for the larger study: 1 Commodification inaugurates the global transformation of qualities into quantities and gives rise to the world computer. 2 “Information” is not a naturally occurring reality but emerges in the footprint of price and is always a means to posit the price of a possible or actual product. 3 The general formula for capital, M- C- M′, where M is money, C is commodity, and M′ is more money) can be rewritten M- I- M′, where I is information. 4 “ Labor,” Attention, Cognition, Metabolism, Life converge as “Informatic Labor” whose purpose, with respect to Capital, is to create state changes in the Universal Turing Machine that is the World Computer— racial capital’s relentless, granular, and planetary computation of its accounts. 5 Semiotics, representation, and categories of social difference function as financial derivatives—as wagers on the economic value of their underliers and as means of structuring risk for capital. 6 Only a **direct engagement with** the computational **colonization** of the life- world **through** a reprogramming (**remaking**) of the **material processes** of abstraction that constitute real abstraction **can secure victory**—in the form of a definitive step out of and away from racial capitalism— for the progressive movements of our times. Such a definitive movement requires an occupation and **decolonization of information**, and therefore of computation, and therefore of money. Only through a remaking of social relations at the molecular level of their calculus, informed by struggle against oppression, can the beauty of living and the fugitive legacies of creativity, community, and care prevail. The mode of comprehension, analysis, and transformation proposed here will require an expanded notion of racial capitalism. It interrogates the existence of deep continuities and long- term emergences— what one could correctly call algorithms of extractive violence—in the history of **capital**ism. These algorithms of violence include the reading and writing of code(s) on bodies, their **surveillance** and overcoding by informatic abstraction. Such algorithms of epidermalization or “the imposition of race on the body” (Browne: 113) are inscribed and executed on the flesh (Spillers 1987); and they are executed by means of codification processes that violently impose both a metaphysical and physical **reformat**ting of **bodies**. As Simone Browne shows, epidermalization is given “its alphanumeric form” (99) through a vast array tools of marking, scarification, discipline, and surveillance that include branding irons, implements of torture, auction blocks, ship design, insurance policies, newspaper ads for runaway “property,” photographs in postcard form and a panoply of other media of dehumanization. Executable code is imposed as social categories of race, gender, religion and property, as ideologies, psychologies, contracts, brands, communication theories, game theories, and quantities of money— these abstractions work their ways into and are indeed imposed by the machines of calculation—and their avatars. We confront a continuous process of unmaking and remaking using all means available; it is violently inscribed on bodies. Sylvia Wynter, in her post–Rodney King piece “No Humans Involved: An Open Letter to My Colleagues” writes, “Both W. E. B. Du Bois and Elsa Goveia have emphasized the way in which the code of ‘Race’ or the Color Line, functions to systemically predetermine the sharply unequal re - distribution of the collectively produced global resources; and therefore, the correlation of the racial ranking rule with the Rich/Poor rule. Goveia pointed out that all American societies are integrated on the basis of a central cultural belief in which all share. This belief, that of the genetic- racial inferiority of Black people to all others, functions to enable our social hierarchies, including those of rich and poor determined directly by the economic system, to be perceived as having been as pre- determined by ‘that great crap game called life,’ as have also ostensibly been the invariant hierarchy between White and Black. Consequently in the Caribbean and Latin America, within the terms of this sociosymbolic calculus, to be ‘rich’ was also to be ‘White,’ to be poor was also to be ‘Black’ ” (Wynter: 52). “To be ‘rich’ was also to be ‘White,’ to be poor was also to be ‘Black.’ ” The real abstraction imposed by executable code— the “code of ‘Race’ ” that “functions to systematically predetermine the structurally unequal re distribution of global resources” is beholden to mediating capitalist exchange while embarking on a radical reformatting of ontology. This reformatting, the supposed result of “that great crap game called life,” brutally correlates race and value, but not entirely by chance, while racial capitalism embarks on imposing this calculus globally. Racial abstraction is endemic to what we will further explore as “real abstraction”; the evacuation of quality by abstract categories and quantities is, as we shall see in more detail, a “necessary” correlate to a world overrun by the calculus of money. Such algorithms of violence **encode** social **difference**, and although they may begin **as heuristic**s (“rules of thumb”), they are none the less crucial to the calculated and calculating expansion of racial capital. Its processes and processing structures the meanings that can be ascribed to— and, as importantly, what can be done to— those of us whose data profiles constitute us as “illegal,” “Mexican,” “Black,” “Gypsy,” “Jew,” and a lexicon of thousands of other actionable signs. This codification process draws from the histories of slavery, of colonialism, of state formation, of genocide, of gender oppression, of religious pogroms, of normativity, and again from the militarization and policing and the apparatuses of calculation that have developed within states and parastates in their own biometric pursuit of capital— power. Their violent destruction and remaking of the world. The internalization of these codes, including the struggles with them and the ways in which they license and/or foreclose various actions, exists in a recursive relationship to their perilous refinement. Their analysis, a code- breaking of sorts, will therefore demand some drastic modifications in many of the various anticapitalist, antistate warrior- stances practiced to date, particularly in a large number of their European and U.S. incarnations that until very recently remained blind to their own imperial violence and are too often complicit with hegemonic codes of masculine, unraced agency, imperialist nationalism, and default liberal assumptions in relation to questions of race, gender, sexuality, coloniality, and other forms of historically institutionalized oppression.3

**The alt to solve codification is a cosmotechnic analysis of technology and of logistics. This entails rejecting the affirmative to instead endorse theorizing of technical evolution – reforming how humans act with technology to transition back to locality to understand the starting point of history and of technology – this reimagining allows technology to be diverse to reverse logistic oppression of racial capitalism. This allows us to rethink of technology not of just 2 frames but instead of many diverse ones.**

**Hui ’19** – (Yuk Hui is a philosopher based in Berlin. He is the author of three monographs: On the Existence of Digital Objects (University of Minnesota Press, 2016), The Question Concerning Technology in China: An Essay in Cosmotechnics (Urbanomic, 2016), and Recursivity and Contingency (Rowman and Littlefield International, Spring 2019). “What Begins After the End of the Enlightenment?” Eflux 96 January 2019 <https://www.e-flux.com/journal/96/245507/what-begins-after-the-end-of-the-enlightenment/)//rvs> rc js69

We need to return to the word “acceleration” itself, since it is too easy to be fooled by an unexamined relation between acceleration and speed. If we recall high school physics, where a = v1-v2/t, acceleration is equal to the change of velocity (from v1 to v2) divided by time. V is velocity, not speed. Velocity is a vector having both magnitude and direction, while speed is mere magnitude. Why not consider another form of acceleration that does not push speed to its extreme, but rather changes the direction of movement, **giving technology a new** **frame and** **orientation** with regard to time and technological development? By so doing, we **can** also **imagine a** bifurcation of the **future**, which **instead of moving towards** the **apocalypse**, **diverges from it and multiplies**. But what does it mean to give technology a new frame? In order to do so, it is necessary to reflect on how we might reappropriate modern technology by systematically reflecting and working on the question of epistemologies and epistemes in light of multiple **cosmotechnics, or** simply put, the **technodiversity** that **is** historically traceable and still productive. This is a project I began with my book The Question Concerning Technology in China: An Essay on Cosmotechnics (2016), in which I use China as an example to elaborate on different conceptualizations of technology and the possibility of conceiving such a technodiversity in history and for the future. The proposal of multiple cosmotechnics—which is not, of course, limited to China—calls for us **to reopen** the concept of “**technics**” **and** **reexamine** the **conditions of technical evolution**. 3. Technodiversity and the Bifurcations of the Future Technics is anthropologically universal in the process of hominization—the understanding of the human as a species because it is the exteriorization of memory and the liberation of human organs. With drawing and writing, human beings exteriorized their memories and imaginations; by inventing flint, the ancients liberated their fingers from many activities. We do not reject the notion that there is a universal dimension to technology, but it is only one of the dimensions. From a cosmotechnical standpoint, technics is fundamentally motivated and constrained by particular geographical and cosmological specificities. If we want to **respond to** the prospect of global **self-extinction**, **we need** to return to a carefully **elaborated discourse on locality** and the places of the human **in the cosmos**. In order to do so, **we need** first of all **to reopen** the **question of technology**, **to conceive of multiple cosmotechnics instead of merely two**: a **premodern** technics **and** a **modern** technics. To be sure, we must be careful with the word “locality” and its politics. Nostalgic invocations of tradition or culture can become **problematic** returns to nationalism, cultural essentialism, and ethnofuturism, **when not approached dialectically**. Here we are not considering small groups revolting against modern technologies in the name of culture or nature; rather, we are elaborating a general strategy **to reappropriate technology** **by first** of all **affirming the irreducible multiplicity of technicity**. While Simondon has been an inspiration for the concept of cosmotechnics, his own critique fails to articulate technics beyond the tradition of Western Enlightenment humanism he inherited. To propose a pluralism is a gesture which could be attributed to both reactionaries and revolutionaries. Take the example of Herder, the fiercest opponent of Voltaire and the author of the book-length 1774 essay This Too a Philosophy of History for the Formation of Humanity, which argues that cultural experiences, values, and feelings are irreducibly diverse. Can one call Herder a nationalist? Many do consider him—a Lutheran priest, student of Kant, and mentor to Goethe—to be a founding figure of German nationalism and the Volksgeist. However, this view is not universally shared. Meineke once asked: “Did not Herder, when he arose to create a new epoch, proclaim both humanity and nationality?” Philosophers like Hans-Georg Gadamer and Isaiah Berlin also saw in Herder both a populism and pluralism, or as Charles Taylor put it, a populism and an “expressivism.” Herder is considered by some to be a genuine cosmopolitan thinker who roots cosmopolitanism in heterogeneity rather than homogeneity; he affirms differences not by **claiming** that **each culture has** a **unique essence**, but by arguing for the importance of locality and the equality of all cultures. Humans are **formed in distinct symbolic** and linguistic **worlds**. Their different forms of knowledge and their different relations to the world and to the earth are not measurable by their advances in modern science and technology. The end of the Enlightenment has to begin by appropriating Herder after Gadamer, Berlin, and Taylor, since theirs is only the first step. We will have to understand the transformative power of heterogeneity instead of retreating to a certain Volk and depending on empathy or sensitivity to resolve tensions within increasingly isolated groupings. As a response to the ecological problems associated with the Anthropocene, anthropologists such as Philippe Descola and others have reopened the question of radical pluralism in a way that considers what is called “multinaturalism” instead of multiculturalism. Because naturalism, which counterposes nature and culture, is very much a product of modernity, it does not capture how nonhumans are perceived in other parts of the world. However, with **modernizatio**n as a synchronization process, we encounter a tipping point that reopens concepts such as nature and technics which **have been inherited** as universal **without being questioned**. This call for pluralism is for us a reminder to consciously reappropriate modern science and technology, to give it a new direction at a time when its planetary spread opens up such a possibility. On the other hand, we may understand Kissinger’s end-of-Enlightenment claim as marking the full realization of a single global axis of time in which all historical times converge into the synchronizing metric of European modernity. It is the moment of disorientation—a loss of direction as well as of the Orient in relation to the Occident. The unhappy consciousness of fascism and xenophobia arises from this inability to orient: as a response, it offers an easy identity politics and an aestheticized politics of technology. More broadly, **such a disorientation** can **be** seen as a desirable and **necessary** deterritorialization **of contemporary capitalism**, **which facilitates** **accumulation beyond** temporal and **spatial constraints**. War is the technique of disruption par excellence, vastly more effective than Uber and Airbnb. In his 1933 The Hour of Decision: Germany and World-Historical Evolution, Spengler describes the war machine as the only possible response to the geopolitical crisis of the time: “England gained her wealth by battles and not by bookkeeping and speculation … [Germany] had to carry on its wars with foreign money and in the service of that money, and it waged wars over miserable scraps of its own country that one diminutive state took from another.” The prospect of war as a solution was not pursued only in the West: the Kyoto school philosophers also proposed total war as a means of overcoming modernity. Today, could **global competition** over the development of artificial intelligence and space technology **become the new condition of** such a **war**? As Spengler wrote in 1933, certain forces are dragging us backwards. It is worth noting the major similarities between his epoch and ours, but we also need to pay special attention to the differences. Spengler wrote in The Hour of Decision of a certain dogmatic thinking in non-Western civilizations that emerged with modernity and was associated with a colonial mentality: Immemorially old “Fellaheen” peoples such as the Indian and Chinese can never again play an independent part in the world of the great powers. They can change their masters, drive one out—as, for example, the Englishman from India—but it is only to succumb to another. They will never again produce a form of political existence of their own. For that they are too old, too rigid, too used up. This failure is largely due to the fact that the question of technology has never been sufficiently addressed, neither in the West nor elsewhere: technology remains a utility, and there is no way of seeing the kingdom of ends beyond the limits of utility and efficiency. Efficiency is a very important factor of technological innovation, but it has to be measured according to a long-term vision instead of short-term profits. The other thing that holds back the colonial mentality is a cynicism that sees no way out. After all, **who can escape** the **economic and geopolitical competition** to master artificial intelligence when technological linearity is identified with the progress of humanity? We can be certain that artificial intelligence will have a significant impact on our societies and economies. If China or Russia slowed their pace of technological innovation, they would lose their competitive edge: Putin already declared to a room full of Russian school children on September, 1 2017 that “whoever leads in AI will dominate the world.” **But if** technological acceleration and innovation are the common task of the sovereign and capital, human cynicism will only deepen as we feel increasingly helpless in the face of technological systems that displace the human roles in so many processes. True philosophical thinking can be the only response to this aporia. I don’t mean to suggest that modern science and technology are evil (not least because they were my first areas of study). Nor am I suggesting that non-European cultures and traditions have been destroyed by evil modern technologies imposed by the West, and that therefore we should give up modern science and technology. The question, rather, is how this **historical process can be rethought**, and what **futures are still available for** imagination and **realization**. If we identify Enlightenment thought with modern technology as an irreversible process guided by universality and rationality, then the only question that remains to be asked is: To be or not to be? But if we affirm that **multiple cosmotechnics exist**, and that **these may allow us to transcend the limit of sheer rationality**, then we can find a way out of never-ending modernity and the disasters that have accompanied it. It would be tragic to misunderstand rationality merely as strict and rigid reasoning—unfortunately, it has been often mistaken as such. The history of reason and its relation to nature and technology, from Leibniz to cybernetics and machine learning, has to be constructed and interrogated differently than it has been. Certain reflections on culture may provide a way to understand these different modes of technological thinking. To rediscover multiple cosmotechnics is not to refuse artificial intelligence or machine learning, but to reappropriate modern technology, to give other frames to the enframing (Gestell) at the core of modern technology. If we want to surpass modernity, there is no way to simply reset it as if it were a computer or a smartphone. We must instead escape its global time-axis, escape a (trans)humanism that subordinates other beings to the terms of its own destiny, and propose a new agenda and imagination of technology that open up new forms of social, political, and aesthetic life and new relations with nonhumans, the earth, and the cosmos. All of this remains to be thought, since it demands a Nietzschean revaluation of the question of technology, and this is possible only when done collectively. In this sense, we can take Kissinger’s statement not as a target of criticism, but as an invitation to think beyond the end of the Enlightenment, as a challenge to undertake the task of thinking through the plurality of its forms. Perhaps Kissinger’s own closing warning is the most appropriate way to end this critique of him: “If we do not start this effort soon, before long we shall discover that we started too late.”

## NC

#### CP Text: States should enter a prior and binding consultation with private space agencies on discussions of property rights in space.

#### Cooperation between private and public is key

Houser 17

Kristin Houser, 2017 (June 12, Futurism, Private Companies, Not Governments, Are Shaping the Future of Space Exploration, <https://futurism.com/private-companies-not-governments-are-shaping-the-future-of-space-exploration>) // rc js69

**Private companies** may be **in the lead**, **but the finish line** for this Space Race **isn’t exactly clear**. The first iteration was arguably “won” when Neil Armstrong took his first steps on the Moon, so does this sequel end when we establish the first Moon base? When a human walks on Mars? When we leave the solar system? Truthfully, the likelihood of humanity ever calling it a day on space exploration is slim to none. The universe is huge, with galaxy estimates in the trillions, so the goalpost will continue moving back (to bring another sport into the analogy). Rather than focusing on competing **in** what is ultimately **an unwinnable race**, **private and government-backed space agencies** **can** actually **benefit from collaboration** **thanks to** their inherent differences. “**The way that** **SpaceX**, **Planetary Resources**, **or Virgin Galactic approaches** space **exploration** is going to be very different from NASA or the Air Force,” explains Lewicki. **Private companies aren’t** beholden to the same **slow** processes that often stall government projects, **and they can** secure or **reallocate funding** much **more swiftly** if need be. **However,** unlike **agencies like NASA**, they do **have** **shareholders** to keep happy and a need to constantly pursue profitability. ADVERTISEMENT The two sectors, therefore, have a tremendous opportunity to help one another. **Private companies** **can generate** **revenue through** government **contracts** —for example, **NASA** has **contracted Boeing** to transport astronauts to the International Space Station (ISS), and SpaceX just closed a deal with the U.S. Air Force to launch its secretive space drone. This leaves the **government agencies** **free to pursue** the kind of **forward-thinking**, **longer-term research** **that might not** immediately **generate revenue**, but that can be later streamlined and improved upon in the private sector. Ultimately, Space Race 2.0 has no losers. The breakthroughs happening in space exploration benefit us all, and truly, a little friendly competition never hurt anyone (unless you count the egos bruised by those tweets).

#### Helps check accountability on both public and private – best of both worlds - Err negative as all the affirmative issues involve a reckless private sector, not the existence merely of a private sector

Clive 20

Thompson, Clive. “Monetizing the Final Frontier.” The New Republic, 3 Dec. 2020, [https://newrepublic.com/article/160303/monetizing-final-frontier. //](https://newrepublic.com/article/160303/monetizing-final-frontier.%20//) js69

**Coping with scarcity** in space **might impel settlers to reconsider** some of the **basic** tent­**poles of Western society**. One is prison: On Mars, jailing someone would cost billions. A settlement would, as the astrophysicist and ethicist Nesvold noted, wonder, “Is it even worth it?” They’d be far more liable to consider styles of justice that don’t involve locking people up. The same goes for environmental thinking. Water and air will be so precious to space settlers that “the people who are living in space are going to be much more concerned about resource conservation,” Schwartz said. “It could be the attitudes that we get there are ones that are helpful to send back [to Earth].” The idea of space as a fresh slate for political thinking is enticing. But it’s **hemmed** in **by** the very **nature of the market forces** currently reaching for the skies. **Would any private-sector firms heading to space agree to** **limit their power** when they’re beyond Earth’s grasp? Nesvold and Lucianne Walkowicz think it’s possible. **There i**s, they believe**, a window of opportunity** right now, **while commercial space activity is still ramping up**, **to convince everyone in New Space**—from the firms to their early (and crucial) governmental clients—**to take** **space ethics seriously**. They’ve been pursuing two tracks of inquiry along these lines: first, talking directly to New Space companies about the political, social, and environmental aspects of space exploitation. (**The smaller firms**, Nesvold noted, **are often eager to talk**; **the big ones**—the SpaceXs and Blue Origins—**not so much**.) Walkowicz has also been holding public events to get everyday citizens to discuss, as she put it, “becoming interplanetary.” “I think making the infrastructure of getting to spaceflight cheaper and more sustainable, reusable, all of that stuff is great—I love watching rocket launches as much as the next person,” Walkowicz told me. But she wants a much broader cross-section of the public to have a voice on how space is used. As she frames things**, it’s a simple matter of public accountability**: For all the self-mythologizing among New Space titans about the new, scrappy, and libertarian cast of modern space exploration, it’s still NASA—and by extension, the people’s treasury—**that’s projected to supply** the biggest **revenue stream for** much **New Space activity** today, and **in the near future**. In other words, we the people are paying for many of these rocket launches, and the huge outlays that will help bankroll the hard stuff, like future human colonies on the moon.

#### Public-private relationship is key for innovation – the ISS proves

Smith 21

Smith, Fisher. “Public-Private Partnerships: The Way to Space.” National Space Society - Working to Create a Spacefaring Civilization, 31 Mar. 2021, https://space.nss.org/public-private-partnerships-the-way-to-space/. // js69

In recent years, **private companies** have begun to **push** the **boundaries of outer space**, making it more affordable to launch rockets and **developing new tech**nologies that have **revolutionized** **the industry**. SpaceX, Blue Origin, Nanoracks, Rocket Lab, and Made in Space (now Redwire), among others, have changed the space industry dramatically. As recently as the early 2000’s, the only way to launch payloads into space was to go through governmental entities such as NASA, European Space Agency, Roscosmos and the China National Space Administration (CNSA). Today, the U.S. has been leading the way in purchasing launch services from private companies, and the private companies themselves work with other companies and investors to launch non-government payloads. However, while these companies have accomplished much, there is still a need for an organized, governmental role in space development. **Government involvement is necessary to ensure** that the **public maintains access** to space and to advance the frontier of development beyond Earth. For instance, consider NASA and the American government. NASA’s ongoing scientific efforts are characterized by [four key strategic goals](https://trumpadministration.archives.performance.gov/NASA/): 1) expanding knowledge of our human species, 2) creating “sustainable long-term exploration and utilization” of outer space for the whole species, 3) addressing national challenges and aiding in economic development, and 4) continuing to optimize and develop their capabilities and operations within outer space. NASA’s ongoing commitments are to develop outer space and technology for the United States and for humanity as a whole. Their missions of exploration, scientific discovery and technological development have continued to advance humanity. The fundamental structure of democratic governments such as those in the U.S. allow regular people to influence and participate in space development policy. People can vote for and petition their elected representatives to promote certain policies for the use of outer space, or join non-profits such as the National Space Society (NSS) to represent their views. This allows anyone to have a say in our development of outer space. While private companies are pushing the boundaries of outer space, NASA and the US government have the ability to create policies that encourage more rapid and beneficial development in space. The National Space Society (NSS) advocates that the government promote policies for infrastructure development and reusability for outer space expansion. **The successful model of public-private partnerships** that has been used to **transport both cargo and crew** to the International Space station via the commercial purchase of launch services should be extended throughout cis-lunar space. **Further, through NASA**, NSS recommends that the government continue **to promote international cooperation**. The international community has cooperated in the past, **particularly with the International Space Station**. By continuing this partnership, multiple States can contribute to outer space exploration and development, and private organizations can continue provide vital services at lower cost, allowing government funds to accomplish more in space. While past developments in outer space have been led by governments and governmental space agencies, that is no longer true. **Private organizations** have **reignited space exploration** and provided a way for humanity to continue to expand and revolutionize technology needed to expand beyond Earth, without many of the hurdles, including cost and regulations, that sometimes hamper government advances. But, the path to the stars is not paved by one or the other. Instead, **cooperation, between States**, governmental agencies, **and private companies**, **will ensure** that **we continue to push our boundaries** into space.

#### ISS key to solve climate – the affs methods of solving climate require ours in order to solve

Anthony 21

Anthony, Erin Winick. “How Scientists Are Using the International Space Station to Study Earth's Climate – Climate Change: Vital Signs of the Planet.” NASA, NASA, 21 Apr. 2021, https://climate.nasa.gov/news/3078/how-scientists-are-using-the-international-space-station-to-study-earths-climate/. // js69

On Earth, we often look toward the sky, longing to know what resides in the rest of the universe. Meanwhile, 250 miles above our planet, **the International Space Station** is looking back. Above us, multiple Earth-observing instruments are mounted on the exterior of several of the station’s modules, including a limb full of cameras, boxes, and tools that hangs off the edge of the station’s Japanese Experiment Module (JEM). Earth-observing CubeSats regularly deploy from the station’s airlock. Astronauts take photos of the planet from the orbiting lab’s windows. This outpost even **conducts** Earth science **experiments**. All of this work provides insight **into** the **climate** of our home and how we might prepare for coming changes. “If you don’t have a good understanding of how things might change, you are in a very poor position to be able to handle it when they do,” said William Stefanov, manager of the Exploration Science Office at NASA’s Johnson Space Center in Houston. Weather reflects the conditions of the atmosphere over a short period of time, and climate is how the atmosphere "behaves" over decades, hundreds of years, or even geological time spans, Stefanov said. That means the factors influencing our climate must be tracked over long periods. Its more than 20 years in orbit makes the space station a great place to collect this long-term data. **The** combined **information** **creates a unique data** set **that** helps us **inform climate decisions and** potentially develop **solutions** to environmental issues. Eyes on Earth The space station affords a unique planetary perspective with an orbital path passing over 90 percent of Earth’s population. Its approximately 52 degrees of orbital inclination allows astronauts and Earth-observing payloads to see the sun rise and set 16 times each day across the world. “That orbit allows the space station to pass over different spots of Earth at different times of day or night and collect data. It is a **fundamentally different data set than** most **other remote sensing instruments** collect on free-flying satellites,” Stefanov said. Mounted on the outside of the orbiting laboratory, international payloads such as ECOSTRESS, GEDI, OCO-3, DESIS, TSIS (also known as TSIS-1), and HISUI individually collect climate-related data. In combination, they provide a unique set of measurements that could push the leading edge of environmental research. “The OCO-3 team wants to understand plants and their role in the carbon cycle,” said OCO-3 Project Scientist Annmarie Eldering of NASA’s Jet Propulsion Lab in Southern California. “It turns out our space station neighbor ECOSTRESS is looking at how plants respond to stress. And then there is GEDI, which is looking at how much plant material is on the ground. Scientists who are thinking about plants and their role in the carbon cycle are super excited. We have heard lots of discussion about how we can use all the data together to better understand plants.” The OCO-3 sensor uses sunlight reflections through the atmosphere to measure variations in atmospheric carbon dioxide, observing changes of less than a single part per million. “Most gases like ozone, carbon monoxide, or water vapor double or triple in atmospheric concentration when they are polluted, so it is pretty easy to detect. But **for carbon dioxide**, **it is uniquely difficult to see the changes**,” Eldering said. Measuring **those small changes could be key to answering long-standing questions about** atmospheric carbon dioxide. “Fortunately for us, the plants and ocean absorb about half of human-generated carbon dioxide emissions every year. But there are still mysteries around how they do that, why the amount is different each year, and how absorption is going to happen in the future,” Eldering said. “Our data are meant to help answer those kind of questions.”Carbon storage and removal also has been investigated both inside and outside station. Photobioreactor examined whether microalgae could help close the carbon loop in life support systems, and Kuwait’s Experiment: E. coli C5 studied the effect of microgravity on E. coli bacteria that were modified to consume carbon dioxide as a food source. Images taken by former space station payload HICO even helped develop an algorithm to detect Harmful Algal Blooms. Algae play a major role in the global carbon cycle, and blooms are responsible for much of the ocean’s carbon absorption. With other devices such as SAGE-III tracking ozone, ISS-LIS and ASIM monitoring lightning, and TSIS tracking the total energy flowing into Earth from the Sun, station experiments advance numerous climate records and models. “Climate change presents what is perhaps humankind’s greatest environmental challenge,” said former TSIS principal investigator and University of Colorado Boulder professor Peter Pilewskie. “Monitoring the energy that flows into, within, and out of the system underpins our ability to understand how **the climate system** works, recognize that it is changing, **and identify** those **mechanisms responsible for climate change**.”

**Warming causes extinction**

Spratt 19

David Spratt, Research Director for Breakthrough National Centre for Climate Restoration, Ian Dunlop, member of the Club of Rome, formerly an international oil, gas and coal industry executive, chairman of the Australian Coal Association, May 2019, “Existential climate-related security risk: A scenario approach,” https://docs.wixstatic.com/ugd/148cb0\_b2c0c79dc4344b279bcf2365336ff23b.pdf

An **existential risk** to civilisation is one posing permanent large negative consequences to humanity which **may** never **be** undone, either **annihilating intelligent life** or permanently and drastically curtailing its potential. With the **commitments** by nations **to** the 2015 **Paris** Agreement, the current path of warming is 3°C or more by 2100. But this figure **do**es **not include “long-term” carbon-cycle feedbacks, which are** materially relevant now and in the near future due to the **unprecedented** rate at which human activity is perturbing the climate system. Taking these into account, the Paris path would lead to around 5°C of warming by 2100. Scientists warn that warming of **4°**C is incompatible with an organised global community, **is devastating to** the majority of **ecosystems**, and has a **high probability of** not **being** stable. The World Bank says it may be “**beyond adaptation**”. But an existential threat may also exist for many peoples and regions at a significantly lower level of warming. In 2017, 3°C of warming was categorised as “catastrophic” with a warning that, on a path of unchecked emissions, low-probability, high-**impact** warming **could be catastrophic by 2050**. The Emeritus Director of the Potsdam Institute, Prof. Hans Joachim Schellnhuber, warns that “climate change is now reaching the end-game, where very soon humanity must choose between taking unprecedented action, or accepting that it has been left too late and bear the consequences.” He says that if we continue down the present path “there is a very big risk that we **will** just **end** our **civilisation**. The human species will survive somehow but we will destroy almost everything we have built up over the last two thousand years.”11 Unfortunately, conventional risk and probability analysis becomes useless in these circumstances because it excludes the full implications of outlier events and possibilities lurking at the fringes.12 Prudent risk-management means a tough, objective look at the real risks to which we are exposed, especially at those **“fat-tail” events**, which may have consequences that are damaging beyond quantification, and **threaten** the **survival** of human civilisation. Global warming projections display a “fat-tailed” distribution **with a greater likelihood of warming** that is well **in excess of** the **average amount** of warming **predicted by** climate **models**, and are of a higher probability than would be expected under typical statistical assumptions. More importantly, the risk lies disproportionately in the “fat-tail” outcomes, as illustrated in Figure 1.

### UQ/Impx

#### Space innovation is high now – supporting space exploration is key now. Private exploration is responsible for current levels.

* Commercializing space k2 innovation
* Spills over to climate, food, medical – proven w/ water purification + robots

Raghavan 8-5-21 Raghavan, Seetha. “The Impact of Innovation in the New Era of Space Exploration: University of Central Florida News.” University of Central Florida News | UCF Today, 5 Aug. 2021, https://www.ucf.edu/news/the-impact-of-innovation-in-the-new-era-of-space-exploration/. // js69

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.

**Gov fails for space innovation – private industry key**

Zimmerman 17

Zimmerman, 2017, ROBERT ZIMMERMAN is an awardwinning independent science journalist and historian who has written four books and innumerable articles on science, engineering, and the history of space exploration and technology for Science, Air & Space, Sky & Telescope, Astronomy, The Wall Street Journal, USA Today, and a host of other publications. He also reports on space, science, and culture on his website, http://behindtheblack.com. He does not work for any aerospace company and has never received any money from NASA for his reporting. His books include Leaving Earth: Space Stations, Rival Superpowers, and the Quest for Interplanetary Travel (Joseph Henry Press), which won the American Astronautical Society’s Eugene M. Emme Astronautical Literature Award in 2003 as that year’s best space history for the general public. He also has written Genesis: The Story of Apollo 8 (Mountain Lake Press) and The Universe in a Mirror: The Saga of the Hubble Space Telescope and the Visionaries Who Built It (Princeton University Press). In 2000 he was co-winner of the David N. Schramm Award, given by the High Energy Astrophysics Division of the American Astronomical Society for Science Journalism, for his essay in The Sciences, “There She Blows,” on the 35-year-old astronomical mystery of gamma ray bursts, CAPITALISM IN SPACE: Private Enterprise and Competition Reshape the Global Aerospace Launch Industry, <https://s3.us-east-1.amazonaws.com/files.cnas.org/documents/CNAS-Report-CapitalismInSpace-Final.pdf?mtime=20170216144336&focal=none> // rc js69

Introduction **It is essential** for any nation that wishes to thrive and compete on the world stage **to have** a successful and **flourishing aerospace industry**, **centered** **on** the capability of putting humans and payloads into space affordably and frequently. This is a bipartisan position held by elected officials from both American political parties since the Soviet launch of the Sputnik satellite in 1957. The reasons for this are straightforward: • Military strength: For strategic reasons, the military must have the capability of launching satellites into orbit for the purpose of surveillance and reconnaissance. In addition, the country’s missile technology must be state-of-the-art to make this data gathering as effective as possible. A healthy aerospace industry is the only way to achieve both. • **Natural resources**: The resources in space – raw materials from asteroids and the planets as well as energy from the Sun – are there for the taking. Other nations are striving to obtain those resources **and the wealth those assets will provide for** their **citizens**. Without direct access to those resources, American society will have less opportunity for growth and prosperity, and the country will eventually fall behind as a major power. • Economic growth: A thriving aerospace industry helps fuel the U.S. economy. It develops cutting-edge technology in fields such as computer design, materials research, and miniaturization that drives innovation and invention in every other field. • National prestige: Even if the previous three reasons did not exist, the prestige of the United States requires that we remain competitive in the increasingly global race to explore and settle the solar system. If the United States doesn’t compete in this effort, future generations of Americans will be left behind as China, Russia, Europe, India, and an increasing number of other nations establish operations in space and permanent colonies on the Moon, Mars, and the asteroids. All of these goals require a prosperous U.S. aerospace industry, which in turn requires above all a viable space-launch industry, capable of placing payloads, both unmanned and manned, into orbit cheaply and efficiently. Unfortunately, since the beginning of the 21st century **the U.S.** **government** has **struggled to create and maintain** a viable **launch industry**. Even as the **gov**ernment **terminated the Space Shuttle program**, with its ability to place and return humans and large cargoes to and from orbit, **NASA**’s many repeated efforts since the mid-1980s to generate a replacement **have come up** **empty**.1 In addition, in the 1990s the Department of Defense instituted a new program, the Evolved Expendable Launch Vehicle (EELV), to guarantee itself launch services that – though successful in procuring those services – have done so at a very high cost, so high, in fact, that the expense now significantly limits the military’s future options for maintaining its access to, and assets in, space. Even as the federal government struggled with this problem, a fledgling crop of new American private launch companies have emerged in the past decade, funded initially by the vast profits produced by the newly born internet industry. These new companies have not been motivated by national prestige, military strength, or any of the traditional national political goals of the federal government. Instead, these **private entities have been driven by** **profit, competition, and** in some cases the ideas of **the vision**ary individuals running the companies, **resulting in** some **remarkable success**, achieved with relatively little money and in an astonishingly short period of time.

#### Space innovation key to solve every extinction scenario

Dorrier 16

Dorrier, Jason. [8 years at singularity university, Senior tech writer at singularity hub, B.A from University of Colorado Boulder] “Elon Musk Is Right: We Can Insure against Extinction by Colonizing Space.” Singularity Hub, 19 Oct. 2016, https://singularityhub.com/2016/10/19/elon-musk-is-right-well-avoid-extinction-by-colonizing-space/. // js69

Why blow billions of dollars on space exploration when billions of people are living in poverty here on Earth? You’ve likely heard the justifications. The space program brings us useful innovations and inventions. Space exploration delivers perspective, inspiration, and understanding. Because it’s the final frontier. Because it’s there. What you haven’t heard is anything to inspire a sense of urgency. Indeed, NASA’s struggle to defend its existence and funding shows how weak these justifications sound to a public that cares less about space than seemingly more pressing needs. Presumably, this is why SpaceX founder Elon Musk, in a [fascinating interview](https://aeon.co/magazine/technology/the-elon-musk-interview-on-mars/) with Ross Andersen, skipped all the usual arguments in favor of something else entirely. **Space exploration**, he says, **is as urgent as** easing **poverty or disease**—**it’s** our **insurance** policy **against extinction**. As we extend our gaze back through geologic time and out into the universe, it’s clear we aren’t exempt from nature’s carelessly terrifying violence. We simply haven’t experienced its full wrath yet because we’ve only been awake for the cosmological blink of an eye. Musk says **an extinction-level event would**, in an existential flash, **make** our down-to-**earth struggles irrelevant**. “Good news, the problems of poverty and disease have been solved,” he says, “but the bad news is there aren’t any humans left.’” We’ve got **all our eggs in one basket**, and that’s a terrible risk-management strategy. We should diversify our planetary portfolio to insure against the worst—and soon. Musk’s line of reasoning isn’t completely novel. It’s what led science fiction writer Larry Niven to say, “The dinosaurs became extinct because they didn’t have a space program.” And it drives Ed Lu’s [quest to save humanity](https://singularityhub.com/2014/07/02/we-dont-have-to-play-cosmic-russian-roulette-with-asteroids-anymore/) from a major asteroid hit. But while we may spot and potentially derail asteroids, not every cosmic threat can be so easily predicted or prevented—a blast from a nearby supernova; a gamma ray burst aimed at Earth; a period of extreme volcanism. Any of these could wipe us out. Musk says he thinks a lot about the silence we’ve been greeted with as our telescopes scan the sky for interstellar broadcasts from other civilizations. Given the sheer number of galaxies, stars, and planets in the universe—it should be teeming with life. If even a tiny percent of the whole is intelligent, there should be thousands of civilizations in our galaxy alone. So where are they? This is known as the [Fermi Paradox](https://singularityhub.com/2016/08/31/are-there-other-intelligent-civilizations-out-there-two-views-on-the-fermi-paradox/), and Musk rattles off a few explanatory theories (there are many). But he settles on this, “If you look at our current technology level, something strange has to happen to civilizations, and I mean strange in a bad way. It could be that there are a whole lot of dead, one-planet civilizations.” That something strange might be an evolutionary self-destruct button, as Carl Sagan theorized. We developed modern rockets at the same time as nuclear weapons. But the Fermi Paradox and its explanations, while philosophically captivating, haven’t settled the question of intelligent life. SETI’s [Seth Shostak cautions](https://theconversation.com/why-i-believe-well-find-aliens-leading-expert-on-search-for-intelligent-extra-terrestrial-life-31066), “The Fermi Paradox is a big extrapolation from a very local observation.” That is, just because we don’t see **compelling evidence of galactic colonization** around here doesn’t mean there is none. But even without the Fermi Paradox, our planet’s geologic record is enough to show that, as Sagan phrased it, “**Extinction is the rule. Survival is the exception**.” So, if you buy Musk’s argument—what next? Well, he didn’t start SpaceX to boost telecommunication satellites into orbit or shuttle astronauts to low-Earth orbit. SpaceX is Musk’s vehicle to another planet, and he isn’t shy saying so. Long after SpaceX sends its first human passengers to the space station; after it’s perfected [reusable rockets](https://singularityhub.com/2014/04/30/can-elon-musk-and-spacex-take-space-travel-from-evolutionary-to-revolutionary/); after it fires up the first Falcon Heavy deep space rocket—after all that, perhaps in the mid-2030s, Musk will found a colony on Mars. Some colonists will be able to afford the $500,000 ticket, he says. Others will sell their earthly belongings—like the early American settlers—to book their trip. But it won’t be a pleasure cruise. No, we’re talking an all-in, one-way commitment to a cause. Even so, getting people to go won’t be a problem. Mars One, an organization similarly dedicated to sending the first humans to Mars, had [over 200,000 people apply](https://singularityhub.com/2013/09/15/200000-apply-to-mars-one-to-live-out-their-lives-on-the-red-planet/) for a few one-way tickets. Mars One may or may not make it to the Red Planet—but at the least they proved there are people willing to sacrifice the easy life to get there. In the long run, however, to establish a permanent, sustainable presence on Mars, **we’ll need a whole lot more than a scattering of rugged colonists**. Musk thinks it’ll take at least a million people to form a genetically diverse population and self-sufficient manufacturing base. All that in a freezing desert wasteland with no oil, oxygen, or trees. Mars has water but it’s not readily available. We’d have to mine the surface and set up heavy industry. It would be a mammoth undertaking. Musk thinks it could happen in the next century. And perhaps he’s right. Perhaps not. As Andersen notes, although he’s on an “epic run…he is always giving you reasons to doubt him.” Monumental goals—with dates attached. A century is a long time. But SpaceX colonizing Mars might be a bridge too far. There are some who doubt our abilities in the near future. Astrophysicist and Astronomer Royal, Martin Rees, [has said](https://kingsreview.co.uk/magazine/blog/2014/05/02/an-interview-with-martin-rees-astronomer-royal-4/), “I think it’s very important not to kid ourselves that we can solve Earth’s problems by mass emigration into space. There’s nowhere in our solar system even as clement as the top of Everest or the South Pole—so it’s only going to be a place for pioneers on cut-price private ventures and accepting higher risks than a western state could impose on civilians.” In other words, maybe some people will venture beyond the Earth and Moon. Even live out subsistence-level lives on other planetary bodies. But a civilization growing out of Musk’s million isn’t likely. At least not until we can [engineer on grander scales](https://en.wikipedia.org/wiki/2312_(novel))—terraform Mars, hollow out asteroids, build rolling bubble cities on Mercury. In either case, Musk is right about one thing. It’s time we pushed the boundaries of space exploration. And whatever your opinion, you have to admire the man’s willingness to go out on a limb when no one else will—and invite the rest of us to join him there.

#### Satellites are key to solve food insecurity – COVID increased an already big issue

UNCTAD 21

UNCTAD. “Countries Look to Satellite Technology to Tackle Food Insecurity - World.” ReliefWeb, 25 Mar. 2021, [https://reliefweb.int/report/world/countries-look-satellite-technology-tackle-food-insecurity. //](https://reliefweb.int/report/world/countries-look-satellite-technology-tackle-food-insecurity.%20//) js69

**Food security is** at a **critical** juncture. The **COVID**-19 pandemic has **disrupted food production**, trade, logistics and value chains. Pandemic-induced lockdowns, travel bans and physical distancing measures have worsened the risk of food insecurity globally. These restrictions are being felt particularly strongly by low-income households and those working in the informal economy in developing countries, partly due to their loss of livelihoods and inability to access markets. While COVID-19 has reduced incomes and disrupted supply chains, chronic and **acute hunger** was **on the rise** even **prior to** the **pandemic due to** factors such as **conflict,** poor **socio-economic condition-s,** natural hazards, **climate** change **and pests**. Amid these pre-existing and new conditions, 14 developing countries are benefitting from a partnership forged in 2020 to harness satellite technology in tackling food insecurity. On 22 March, 25 participants from Afghanistan, Algeria, Kenya, Lao PDR, Lebanon, Malawi, Mauritius, Myanmar, Nigeria, South Africa, Syria, Thailand, Turkey and Zambia kick-started the initiative with a virtual meeting. They learned more about the initiative ahead of a two-month online course on how to harness the potential of satellite technology, which runs until the end of May. A partnership for the future The new initiative is part of an ongoing partnership launched in July 2020, in line with a [memorandum of understanding](https://twitter.com/UNCTAD/status/1286316119217840128) signed under the auspices of the [United Nations Commission on Science and Technology for Development](https://unctad.org/topic/commission-on-science-and-technology-for-development) (UNCSTD), for which UNCTAD serves as the secretariat. "The partnership is expected to lead to meaningful **transfer of technology** to the participating countries," said Shamika N. Sirimanne, UNCTAD's director of technology and logistics. "We know that science, technology and innovation **play a central role in** the achievement of the SDGs and this programme will contribute directly to achieving SDG (**sustainable dev**elopment **goal**) 2 on ending hunger and **achieving food security, using satellite technologie**s," she added. "Our expectation is that this project will enable participating countries to build their know-how and technical capabilities in crop monitoring, which can increase their resilience to future shocks in food production systems," Ms. Sirimanne said. The [CropWatch Innovation Cooperation Programme](https://unctad.org/news/satellite-technology-gives-developing-nations-food-security-boost) aims to enhance capacities for food security early warning using the Earth observation satellite system for crop monitoring, [CropWatch](http://www.cropwatch.com.cn/htm/en/index.shtml). Cropwatch **uses satellite data to monitor crop conditions**, integrating it with other climate-related data on drought, pests and diseases **for better farm management**. The programme's partners include UNCTAD-UNCSTD, the [Alliance of International Science Organizations (ANSO)](http://www.anso.org.cn/) and the [Aerospace Information Research Institute (AIR)](http://english.aircas.ac.cn/) of the [Chinese Academy of Sciences (CAS)](https://english.cas.cn/). "We believe that earth observation system has an important role to play in solving food security issues and achieving sustainable development goals," said Ms. Jie Liu, Director of International Cooperation Division at AIR/CAS. "This training will provide useful insights to the system and strengthen the agricultural capacity of participating countries," she added. Resilience hopes hinged to technology Participating countries also welcomed the expected benefits of the project at the kick-off meeting. "What we are expecting from this programme is to learn about the ways to increase food production for farmers through crop monitoring and drought assessments," said the Nosiseko Nombedesho Mashiyi, South African National Space Agency remote sensing scientist. "We are looking forward to learning how remote sensing can assist in achieving this objective," she added. Another participant also highlighted the role of the project in helping countries to be more climate resilient. "By participating in this programme, we expect to become more climate-resilient through better preparedness by adopting innovative technologies and being more equipped to achieve our ultimate aim of food security, in line with SDG 2," said Arty Gungoosingh Bunwaree, a senior research scientist at the Food and Agricultural Research and Extension Institute in Mauritius.

#### Food insecurity approaching – satellites key to to curb

* Satellites create the imagery and visualization

Demirbas 18

Prof. Dr. Nevin Demirbaş 18, professor, Department of Agricultural Economics, Ege University, “Precision Agriculture in Terms of Food Security : Needs for The Future,” <https://www.researchgate.net/publication/328655146_Precision_Agriculture_in_Terms_of_Food_Security_Needs_for_The_Future,> // js69

The current world population of 7.6 billion is expected to reach 8.6 billion in 2030, 9.8 billion in 2050 and 11.2 billion in 2100, according to United Nations (UN). With roughly **83 million people** being **added to** the world’s **population every year**, the upward trend in population size is expected to continue, even assuming that fertility levels will continue to decline (UN, 2017). This means there will be an **extra billion** people **to feed** with**in** the **next decade**. Continuing population and consumption growth will mean that **the global demand for food will increase** for at least another 50 years. A major correlate of this deceleration in population growth is increased wealth, and with higher purchasing power comes higher consumption and a greater demand for food, all of which add pressure to the food supply system (Godfray et al., 2010; FAO, 2017). At the same time, farmers are experiencing greater competition for land, water, and energy, and the need **to curb** the many **negative effects** of food production on the environmentis becoming increasingly clear. The effects of climate change are a further threat. But the world can produce more food and can ensure that it is used more efficiently and equitably (Thornton et al., 2009; Godfray and Garnett, 2014). There is a need for multi-faceted and linked strategies in which different components are explored to ensure sustainable and equitable food security at the global, regional and national level. At the same time, future’s food **systems need to** be resource **efficient and sustainable**. Efficient use of water, reduction of soil erosion and degradation to the minimum, minimization of energy input and maximization of yields under uncertain natural conditions are the goal (Hakkim et al., 2016). They pose highest requirements on the underlying information and knowledge infrastructure and make future farming a knowledge business and a very sophisticated management task (Bach and Mauser, 2018). Digitization has increased in importance for the agricultural sector and is described through concepts like Smart Farming (SF), Precision Farming (PF) and Precision Agriculture (PA). These type practices are sciences that is intertwined with several other emerging areas of research and practice (Zhou et al., 2017) **such as digital ag**riculture, decision agriculture, smart agriculture, virtual agriculture, ‘Big-Data’ in agriculture, sustainable agriculture, agriculture 4.0, prescription farming and others (Yost et al., 2018). **Tech**nology **like** **GPS, and**, in particular, **sensors** are being used **in field cultivation** and livestock farming to undertake automatized agricultural management activities. PA or PF is generally defined as information and technology based farm management system to identify, analyse and manage spatial and temporal variability within fields for optimum productivity and profitability, sustainability and protection of the land resource by **minimizing** the production **costs**. Increasing environmental consciousness of the general public is necessitating us to modify agricultural management practices for sustainable conservation of natural resources such as water, air and soil quality, while staying economically profitable (Sonka and Cheng, 2015; Webber et al., 2017). Stakeholders, such as farmers, seed producers, machinery manufacturers, and agricultural service providers are trying to influence this process (Schönfeld et al., 2018). These practices are facilitating long-term improvements in order to achieve effective environmental protection. Despite all the positive contributions, the use of such technologies brings with it some controversial issues, particularly data protection.

**Food insecurity causes existential governance failures.**

**Rockström, et al, 20**—Potsdam Institute for Climate Impact Research (Johan, with Ottmar Edenhofer, Juliana Gaertner, and Fabrice DeClerck, “Planet-proofing the global food system,” Nature Food, Vol. 1, January 2020, 3-5, dml)

Food security, social instability and conflicts. The human pressures put on the entire Earth system are causing a rise in frequency and amplitude of extreme weather events16 and a reduction in ecological resilience. Occurring simultaneously with decades of agricultural research and development that focussed on enhancing productivity over building resilience, this has resulted in **heightened vulnerability** as monocultures designed to operate efficiently under stable conditions are **not adapted** to handle shocks and stress amplified by global change. Food production is the first victim of environmental pressures arising in the Anthropocene. Our immediate scientific preoccupation with this worrying trajectory has been on mapping impacts on food production and seeking strategies to build food-system resilience. This may not be enough. Real world examples are providing **evidence**, while still debated, of the **amplifying role** of food-system collapse on **social conflict** and **migration**, ranging from the **Arab Spring** to the **Syrian war**, the **Sudanese crisis** and the **Sahelian instabilities**17–19. This is an area in need of integrated analyses that couple big data and qualitative insights on social movements (physical and political), livelihood conditions, food security, and biophysical trajectories and shocks.

A new paradigm for our food future. Planetary boundaries for the food system define thresholds for the critical overuse of global commons. In the Anthropocene, when we are at risk of **destabilising the Earth system**, the **global commons** need to be **expanded** from including only global externalities (high seas, atmosphere, polar ice sheets) to also include all major biomes and element cycles, which together contribute to regulate the state of the Earth system20. This puts the onus on **food**, and requires an urgent shift in mindset to recognize agricultural ecosystems as possibly the Earth’s **largest biome** — and the biome with the **largest impact** on the planet’s elemental cycles: **nitrogen**, **phosphorus**, **water** and **carbon**.

A second major shift is to look beyond carbon and climate. Building resilient food systems requires a systems-approach integrating carbon, nitrogen, phosphorus, water, soils, biodiversity and biome stability; and taking a truly inter-disciplinary planetary health approach by addressing food cultures, nutritional security and geopolitical stability, as well as the role of governance, trade and equity. In light of the significant lag time to drive global progress on climate mitigation, we cannot afford to have succeeded in tackling climate before moving on to other planetary boundaries. Approaches must be developed and tested at a scale that operationalises a global commons framework for the stewardship of all food-related planetary boundaries. The social costs of our current global food system are **unprecedented** in both inter-temporal and inter-regional scales15, providing crucial information for effective governance of the commons. Advanced methods of cost-benefit analysis and the application of the precautionary principle will allow the social costs of exceeding planetary boundaries for food to be used in the transition process of crafting and justifying government rules and interventions, such as agricultural subsidies and trade agreements, providing a new paradigm for navigating our ‘Common Food Future’.

Gone are the days when it was enough to ‘think global and act local’. All our actions **aggregate** and are **interconnected** with the global commons and the Earth system. The global food system transformation to a future where healthy, culturally appropriate and adequate diets are available for all, from food systems that operate within planetary boundaries, is one of the **grand transformation challenges** for humanity over the coming decades. We must act across scales and along the entire food value chain to enable a prosperous and equitable **future for humanity** on Earth.

### Link – Exploration – Shammas and Holen 19

#### Outer Space is a spectacle and focusing on it just feeds back into the technocratic landscape – governments pick and choose companies to subsidize and functionally run – the public and private are intertwined by the spectacle.

Shammas and Holen 19

Shammas, V.L., Holen, T.B. One giant leap for capitalistkind: private enterprise in outer space. Palgrave Commun 5, 10 (2019). Page 4. [https://doi.org/10.1057/s41599-019-0218-9 //](https://doi.org/10.1057/s41599-019-0218-9%20//) js69

Emblematic of **this capitalist turn** in space **was the founding of Moon Express in 2011**, composed of a ‘team of prominent Silicon Valley entrepreneurs…**shooting for the moon with** a new **private venture aimed at scouring** the lunar surface for precious metals and **rare metal**lic elements' (Hennigan, 2011). Following Google’s Lunar XPRIZE—an intertwining of Silicon Valley and NewSpace’s capitalistkind—which promised a $20 million prize for the first private company to land a spacecraft on the Moon, travel 500 meters, and transmit high-definition images back to Earth, all by March 2018,9 Moon Express claimed that it would be capable of landing on the lunar surface and earn the cash prize. Their stated goal was twofold: first, to mine rare resource like Helium-3 (a steadily dwindling scarce resources on Earth), gold, platinum group metals, and water, **and,** second, to carry out scientific work that would ‘help researchers **develop** human space **colonies** for future generations' (Ioannou, 2017). The ordering is telling: first profits, then humanity. These were the hollow, insubstantial promises of a venture-capitalized NewSpace enterprise: in early 2018, Google announced that none of the five teams competing for the Lunar XPRIZE, including Moon Express, would reach their stated objectives by the 31 March deadline and they were taking their money back (Grush, 2018). In this sense, it was typical for NewSpace in its formative years: a corporate field populated by (overly exuberant) private enterprises who promised more than they could deliver. But the belief in NewSpace is real enough. In a tome bursting with the optimism of NewSpace, Wohlforth and Hendrix claim that ‘the commercial spaceflight industry is transforming our sense of possibility. Using Silicon Valley’s money and innovative confidence, it will soon bring mass space products to the market' (2016, p. 7). **The trope of humanity plays a** key **role in the rhetoric of** the adherents of **NewSpace**. To fulfill the objectives of NewSpace, **including profit maximization and** the **exploitation of celestial bodies**, the symbolic figure of a shared humanity serves a useful purpose, **camouflaging the conquest of space** **by capitalism with a dream of** humanity boldly **venturing** forth **into the dark unknown**, thereby also **providing** the **legitimacy and enthusiasm** needed **to** support **bolster the legitimacy** of NewSpace. So long as the stargazers and SpaceX watchers are permitted their fill of ‘collective effervescence', to use Durkheim’s (1995, p. 228) concept, capitalist entrepreneurs will be able to pursue their business interests more or less as they please. **The spectacle of outer space is crucial in this regard**. Crucially, however, and despite this spectacle, SpaceX’s technology might not necessarily be more sophisticated than its competitors or predecessors. Some industry insiders have rebuffed some of the more the spectacular claims of NewSpace’s proponents, arguing that launch vehicle reusability requires a (perhaps prohibitively) expensive refurbishing of the rocket engines involved in launches: ‘The economics will depend on how many times a booster can be flown, and how much the individual expense will be to refurbish the booster…each time' (Chang, 2017). Reusability may be a technological dead-end because of the inherently stressful effects of a rocket launch on the launch vehicle’s components, with extreme limitations on reusability beyond second-use as well as added risks of malfunctions that customers and insurers are likely to wish to avoid. **Furthermore,** the Falcon Heavy still has not matched the power and payload capacity of NASA’s Saturn V, a product of 1960s militaryindustrial engineering and Fordist **state spending programs**. What SpaceX and other NewSpace corporations do with great ingenuity, however, is to **manage the spectacle of outer space**, producing **outpouring**s of public fervor, aided by a widespread adherence to the ‘Californian Ideology' (Barbrook and Cameron, 1996), or post-statist **techno-utopianism**, **in** many **postindustrialized societi**es. The very centrality of these maneuvers has initiated a new phase in the history of capitalist relations, that of ‘charismatic accumulation'—certainly not in the sense of any ‘objective' or inherent charismatic authority, but with a form of illusio, to speak with Bourdieu, vested in the members of capitalistkind by their uncanny ability to spin mythologizing self-narratives. This has always been part of the capitalist game, from Henry Ford and onwards, but the charismatic mission gains a special potency in the grandiose designs of NewSpace’s entrepreneurs. Every SpaceX launch is a quasi-religious spectacle, observed by millions capable of producing a real sense of wonder in a condition of (legitimizing) collective effervescence. Outer space necessarily reduces inter-human difference to a common denominator or a shared species-being. An important leitmotiv in many Hollywood science fiction movies, including Arrival (2016), is that a first encounter with an alien species of intelligent beings tends to flatten all human difference (including ethnoracial and national categories), thereby restoring humankind to its proper universality (see also Novoa, 2016). Ambassadors of Earth as a whole, not representatives of particular nations, step forth to meet alien emissaries. But even in the absence of such an encounter, the search for habitable domains (or rather, profitable locales) beyond Earth will necessarily forge a shared conception of the human condition, initiated with the Pale Blue Dot photograph in 1990. Typical of this sentiment are the words of the astronomer Carl Sagan, who famously observed of this photograph: ‘On it everyone you love, everyone you know, everyone you ever heard of, every human being who ever was, lived out their lives'. This naïvely humanistic vision has been one of the dominant tropes in the discourse on space since the 1950s, and it remains strong today, as with the claims of the United Nations Office for Outer Space Affairs (UNOOSA) that their task is to ‘uphold the vision of a more equitable future for all humankind through shared achievements in space'. This representational tendency **mobilizes humanism to generate** **enthusiasm** about space-related activities. But such representations are increasingly being recuperated by capitalist enterprise, so that it is not humankind but its modulation by space capitalists that will launch into the dark unknown. It is not humankind but capitalistkind that ventures forth. In early 2018, NASA was set to request $150 million in its 2019 budget to ‘enable the development and maturation of commercial entities and capabilities which will ensure that commercial successors to the ISS…are operational when they are needed', only one of many signs that space is becoming a space for capitalism. According to one estimate, the value of just one single asteroid would be more than $20 trillion in rare earth and platinum-group metals (Lewis, 1996), a precious prize indeed for profit-hungry corporations.10 Even the UNOOSA spoke vociferously in favor of the commercialization of space, appealing variously to the ‘industry and private sector' and elevating the ‘space economy' to a central pillar in its Space2030 Agenda (including the ‘use of resources that create and provide value and benefits to the world population in the course of exploring, understanding and utilizing space'), **even as the** **UN** agency **falls back on** a **humanist**ic, almost social-democratic **vision** of the equitable distribution of benefits (and profits) **from space mining**, exploration, **and colonization** (UNOOSA, 2018).