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### Technocratic Accumulation

#### The genesis of attempts to appropriate outer space cultivated the conditions for technocratic order. Launch became the object of public imagination, feeding a neoliberal valorization of technology and imperialism.

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In an infamous phrase, President Nixon called Apollo 11 the "greatest week in the history of the world since the Creation."45 If the mythmakers at NASA were to be believed, then Nixon was not far off the mark. For a democracy capable of Hiroshima, NASA introduced the rocket launch as the new spectacle of state power and the surveillance satellite as the new symbol of state knowledge.46 For a nation fearful of communist expansion, Tranquility Base confirmed the full reach of Manifest Destiny. For a postwar culture aspiring to make sense of its momentum in the world, the frontier epic of space exploration valorized American exceptionalism and interpreted it as foreordained by the gods.47 Yet the space program held out the promise of something greater still. As a vehicle for what David Nye has called the "American technological sublime,"4 NASA presented itself as an image of the nation's technological future. In Houston, Cape Kennedy, Washington, and now on the Moon, the promise of the Great Society would be fulfilled by America's "new priesthood"49 of scientists and technicians, a caste of "saviors and miracle workers"50 who could command enormous instrumental power and symbolic capital1 with an aura of total competence.

Of course, that "Whitey's on the moon"' 2 meant different things to different people. For many of its critics, the space program represented the birth of a new, technocratic order in society. As the defining moment in the history of the American Rocket State, 3 Apollo 11 could be understood as the prodigy not of miracle workers, but of specialists without spirit. At NASA and elsewhere, the nation's new class of "technologues" 4 promised neutral technical means towards self-evident political ends and fashioned a legitimating ideology out of the "end of ideology" itself. In doing so, they made the dream of escape into space all the more appealing as they created on Earth the material conditions for the "technocratic consciousness"'5 of "one-dimensional man." 56 No wonder American liberal intellectuals responded to the space program's "behemoth piece of American calculus,"' 7 says Tom Wolfe, with "amazing hostility."58 No wonder the nation's poets tended to ignore the whole thing.5 9 The nation's lawyers, however, did not have that luxury. For them, or at least for those who called themselves "space lawyers," the Space Age threatened the art of legal practice and the scope of legal knowledge. Indeed, for some, it meant the death of law.

#### NASA’s rocket state encoded cybernetics as the American language of power. Technocracy ensures the intertwining of governance and the impetus for industry.

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The immediate effect of the Sputnik Crisis in America was a call for total mobilization, for "blood, sweat and tears," 69 in pursuit of scientific and technological superiority. This call extended to the nation's educational system, to its industrial base, to its commodity culture, and, of course, to its methods of governance. Ever prudent, Eisenhower refused to be carried away by the panic. In his 1958 State of the Union Address, he declared that the Soviet Union had begun to wage "total cold war,"7 but proposed only modest reforms. It was left to the Kennedy and Johnson Administrations, to the New Frontier and the Great Society, to wage total cold war in return.

One result was that by the mid-1960s, science became "the major Establishment in the American political system,"71 and the technocratic rhetoric of systems theory,7 " cybernetics,73 and synoptic decisionmaking74 became the new language of power. As Hans Morgenthau wrote in 1964, "[i]n the eyes both of the political authorities and the public at large, the scientific elites appear as the guardians of the arcana imperii, the secret remedies for public ills."75 It was one such guardian, Secretary of Defense Robert S. McNamara, who probably expressed the new technocratic ethos best in The Essence of Security: "IT]he real threat to democracy comes not from overmanagement, but from undermanagement. To undermanage reality is not to keep it free. It is simply to let some force other than reason shape reality.... [l]f it is not reason that rules man, then man falls short of his potential." 76 Truly, it was, for some, an Apollonian age-one that began and would end in war.

The rise of NASA both contributed to and reflected the more general rise of technocracy in American society. In March 1958, NASA was established as a civilian agency charged with defending American prestige in the eyes of the world. With its famed "aura of competence,"77 the space program soon came to represent big, expensive government that worked. NASA chief James E. Webb called his agency a "prototype for tomorrow," the "pattern needed by this nation" in which progress obtained through "'adaptive, problem-solving, temporary systems of diverse specialists, linked together by coordinating executives in organic flux."' 78 As Webb's exotic rhetoric suggests, and as Walter McDougall has persuasively argued, NASA helped to convert American politics over to the "technocratic temptation" 79 by serving as a "model for the application of the technocratic method to civilian goals."' Despite the protestations of many in the American scientific community, NASA was also popularized as the archetype of state-sponsored "command technology" and as proof, however tenuous, of the material, intellectual, and spiritual advantages that would flow from it."

Though the American space program became a cultural icon in the 1960s, the technocratic worldview that it came to symbolize was not without its detractors. For Hannah Arendt, space exploration abetted modernity's "rebellion against human existence." 2 The narrator of Norman Mailer's Of a Fire on the Moon offered a subtle, though hardly reassuring, variation on this theme. For him, space exploration held out the hope of humanistic rebellion against modernity: "[T]echnology had penetrated the modem mind to such a depth that voyages in space might have become the last way to discover the metaphysical pits of that world of technique which choked the pores of modem consciousness." 3 When the likes of Arendt or Mailer criticized the space program in these terms, they did so as part of the Space Age's wide-ranging and oftentimes best-selling literature on the specter of technocracy in the industrialized world. 4 This literature took a variety of forms. In its more precise incarnations, it predicted-and sometimes purported to expose-the devolution of political authority upon the bureaucratic expert and the reordering of political values according to the imperatives of scientific/technological convergence." In its more ambitious incarnations, it also criticized the totalitarian spirit of the age86 and declared the death of the subject.87 For those who subscribed to this critique, the space program was little more than technocratic pyramid-building and a well-orchestrated distraction from the discontents of technological civilization. The astronaut, meanwhile, became the controversial ideal type of the technocratic Zeitgeist-a scientific superman to his many admirers, a soulless organization man, the consummate "cheerful robot," 88 to the few who begrudged him his fame.

#### This culminates in the epoch of NewSpace wherein discourses of humanity’s pre-ordained mission to colonize and profit from outer space imbricates the world into a paradigm of neoliberal qua charismatic accumulation.

Shammas and Holen 19 [(Victor L, a sociologist working at the Department of Sociology and Human Geography, University of Oslo; Tomas B., independent scholar in Oslo, Norway) “One giant leap for capitalistkind: private enterprise in outer space,” 1-29-2019, pg. 3-5] TDI

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.

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 metallic 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 military-industrial 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 outpourings of public fervor, aided by a widespread adherence to the ‘Californian Ideology' (Barbrook and Cameron, 1996), or post-statist techno-utopianism, in many postindustrialized societies.

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 humanistic, almost social-democratic vision of the equitable distribution of benefits (and profits) from space mining, exploration, and colonization (UNOOSA, 2018).

We find evidence of this strategic humanism in all manner of pronouncements from NewSpace entrepreneurs. To take but one example: Naveen Jain, the chairman and co-founder of MoonEx, a lunar commercialization firm, has claimed that ‘from an entrepreneur’s perspective, the moon has never truly been explored'. The moon, Jain has claimed, ‘could hold resources that benefit Earth and all humanity' (Hennigan, 2011). We should note the recourse to the trope of all of humanity by this NewSpace entrepreneur, mimicked in the 1979 Moon Agreement, a UN treaty, which also held that the Moon’s resources are ‘the common heritage of mankind' (Tronchetti, 2013, p. 13).11 In a purely factual sense, of course, Jain is wrong: Google Moon offers high-resolution images of the lunar surface,12 and the moon has already been explored, in the sense of being mapped, albeit rudimentarily and with room for further data collection. Crucially, however, these cartographic techniques have not been put to capitalist uses: mapping minerals, for instance, or producing detailed schemata that might one day turn the Moon into a ‘gas station' for commercial space ventures, as Wilbur Ross, Trump’s Secretary of Commerce, has proposed (Bryan, 2018). What is lacking, in short, are capitalist maps of the Moon, i.e., a cartography for capital. But as Klinger (2017: 199) notes, even though no one is ‘actively mining the Moon' at present, at least ‘six national space programs, fifty private firms, and one graduate engineering program, are intent on figuring out how to do so'; furthermore, Klinger draws attention to mapping efforts that have revealed high an abundance of rare earth metals, thorium, and iron in the Moon’s ‘Mare Procellarum KREEP' region (Klinger, 2017, p. 203).

We have already noted that it is not humanity, conceived as species-being, a Gattungswesen, that makes its way into space. The term Gattungswesen, of course, has a long intellectual pedigree, harking back to Hegel, Feuerbach, Marx, and others. The term can ‘be naturally applied both to the individual human being and to the common nature or essence which resides in every individual man and woman', Allan Wood (2004, p. 17) writes, as well as ‘to the entire human race, referring to humanity as a single collective entity or else to the essential property which characterizes this entity and makes it a single distinctive thing in its own right'. Significantly, the adherents of NewSpace often resort to the idea of humanity in its broad universality (e.g., Musk, 2017), but this denies and distorts the modulation of humanity by its imbrication with the project of global (and post-global, i.e., space-bound) capitalism. It is precisely the sort of false universality implied in the humanism of the supporters of NewSpace that Marx subjected to a scathing critique in the sixth of his Theses on Feuerbach. Here Marx noted that the human essence is not made up of some ‘abstraction inherent in each single individual' (1998, p. 570). Instead, humans are defined by the ‘ensemble of social relations' in which they are enmeshed. Under NewSpace, it is not humanity, plain and simple, that ventures forth, but a specific set of capitalist entrepreneurs, carrying a particular ideological payload, alongside their satellites, instruments, and supplies, a point noted by other sociologists of outer space, or ‘astrosociologists' (Dickens and Ormrod, 2007a, 2007b).

#### Thus, we affirm that the appropriation of outer space by private entities is unjust – space is the spatial fix that ensures the longue durée of capital accumulation into the future through the ventures of NewSpace. Voting aff flips the kill switch on state-sponsored neoliberalism.

Shammas and Holen 19 [(Victor L, a sociologist working at the Department of Sociology and Human Geography, University of Oslo; Tomas B., independent scholar in Oslo, Norway) “One giant leap for capitalistkind: private enterprise in outer space,” 1-29-2019, pg. 5-6] TDI

No longer terra nullius, space is now the new terra firma of capitalistkind: its naturalized terroir, its next necessary terrain. The logic of capitalism dictates that capital should seek to expand outwards into the vastness of space, a point recognized by a recent ethnography of NewSpace actors (Valentine, 2016, p. 1050). The operations of capitalistkind serve to resolve a series of (potential) crises of capitalism, revolving around the slow, steady decline of spatial fixes (see e.g., Harvey, 1985, p. 51–66) as they come crashing up against the quickly vanishing blank spaces remaining on earthly maps and declining (terrestrial) opportunities for profitable investment of surplus capital (Dickens and Ormrod, 2007a, p. 49–78).

A ‘spatial fix' involves the geographic modulation of capital accumulation, consisting in the outward expansion of capital onto new geographic terrains, or into new spaces, with the aim of filling a gap in the home terrains of capital. Jessop (2006, p. 149) notes that spatial fixes may involve a number of strategies, including the creation of new markets within the capitalist world, engaging in trade with non-capitalist economies, and exporting surplus capital to undeveloped or underdeveloped regions. The first two address the problem of insufficient demand and the latter option creates a productive (or valorizing) outlet for excess capital. Capitalism must regularly discover, develop, and appropriate such new spaces because of its inherent tendency to generate surplus capital, i.e., capital bereft of profitable purpose. In Harvey’s (2006, p. xviii) terms, a spatial fix revolves around ‘geographical expansions and restructuring…as a temporary solution to crises understood…in terms of the overaccumulation of capital'. It is a temporary solution because these newly appropriated spaces will in turn become exhausted of profitable potential and are likely to produce their own stocks of surplus capital; while ‘capital surpluses that otherwise stood to be devalued, could be absorbed through geographical expansions and spatio-temporal displacements' (Harvey, 2006, p. xviii), this outwards drive of capitalism is inherently limitless: there is no end point or final destination for capitalism. Instead, capitalism must continuously propel itself onwards in search of pristine sites of renewed capital accumulation. In this way, Harvey writes, society constantly ‘creates fresh productive powers elsewhere to absorb its overaccumulated capital' (Harvey, 1981, p. 8).

Historically, spatial fixes have played an important role in conserving the capitalist system. As Jessop (2006, p. 149) points out, ‘The export of surplus money capital, surplus commodities, and/or surplus labour-power outside the space(s) where they originate enabled capital to avoid, at least for a period, the threat of devaluation'. But these new spaces for capital are not necessarily limited to physical terrains, as with colonial expansion in the nineteenth century; as Greene and Joseph (2015) note, various digital spaces, such as the Internet, can also be considered as spatial fixes: the Web absorbs overaccumulated capital, heightens consumption of virtual and physical goods, and makes inexpensive, flexible sources of labor available to employers. Greene and Joseph offer the example of online high-speed frequency trading as a digital spatial fix that furthers the ‘annihilation of space by time' first noted by Marx in his Grundrisse (see Marx, 1973, p. 524).

Outer space serves at least two purposes in this regard. In the short-to medium-term, it allows for the export of surplus capital into emerging industries, such as satellite imaging and communication. These are significant sites of capital accumulation: global revenues in the worldwide satellite market in 2016 amounted to $260 billion (SIA, 2017, p. 4). Clearly, much of this activity is taking place ‘on the ground'; it is occurring in the ‘terrestrial economy'. But all that capital would have to find some other meaningful or productive outlet were it not for the expansion of capital into space. Second, outer space serves as an arena of technological innovation, which feeds back into the terrestrial economy, helping to avert crisis by pushing capital out of technological stagnation and innovation shortfalls.

In short, outer space serves as a spatial fix. It swallows up surplus capital, promising to deliver valuable resources, technological innovations, and communication services to capitalists back on Earth. This places outer space on the same level as traditional colonization, analyzed in Hegel’s Philosophy of Right, which Hegel thought of as a product of the ‘inner dialectic of civil society', which drives the market to ‘push beyond its own limits and seek markets, and so its necessary means of subsistence, in other lands which are either deficient in the goods it has overproduced, or else generally backward in creative industry, etc.' (Hegel, 2008, p. 222). In this regard, SpaceX and related ventures are not so very different from maritime colonialists and the trader-exploiters of the British East India Company. But there is something new at stake. As the Silicon Valley entrepreneur Peter Diamandis has gleefully noted: ‘There are twenty-trillion-dollar checks up there, waiting to be cashed!' (Seaney and Glendenning, 2016). Capitalistkind consists in the naturalization of capitalist consciousness and practice, the (false) universalization of a particular mode of political economy as inherent to the human condition, followed by the projection of this naturalized universality into space—capitalist humanity as a Fukuyamite ‘end of history', the end-point of (earthly) historical unfolding, but the starting point of humanity’s first serious advances in space.

What role, then, for the state? The frontiersmen of NewSpace tend to think of themselves as libertarians, pioneers beyond the domain of state bureaucracy (see Nelson and Block, 2018). ‘The government should leave the design work and ownership of the product to the private sector', the author of a 2017 report, Capitalism in Space, advocates. ‘The private companies know best how to build their own products to maximize performance while lowering cost' (Zimmerman, 2017, p. 27). One ethnographer notes that ‘politically, right-libertarianism prevails' amongst NewSpace entrepreneurs (Valentine, 2016, p. 1047–1048). Just as Donald Rumsfeld dismissed the opponents to the Iraq War as ‘Old Europe', so too are state entities’ interests in space exploration shrugged off as symptoms of ‘Old Space'. Elon Musk, we are told in a recent biography, unlike the sluggish Big State actors of yore, ‘would apply some of the start-up techniques he’d learned in Silicon Valley to run SpaceX lean and fast…As a private company, SpaceX would also avoid the waste and cost overruns associated with government contractors' (Vance, 2015, p. 114). This libertarianism-in-space has found a willing chorus of academic supporters. The legal scholar Virgiliu Pop introduces the notion of the frontier paradigm (combining laissez-faire economics, market competition, and an individualist ethic) into the domain of space law, claiming that this paradigm has ‘proven its worth on our planet' and will ‘most likely…do so in the extraterrestrial realms' as well (Pop, 2009, p. vi). This frontier paradigm is not entirely new: a ‘Columbus mythology', centering on the ‘noble explorer', was continuously evoked in the United States during the Cold War space race (Dickens and Ormrod, 2016, pp. 79, 162–164).

But the entrepreneurial libertarianism of capitalistkind is undermined by the reliance of the entire NewSpace complex on extensive support from the state, ‘a public-private financing model underpinning long-shot start-ups' that in the case of Musk’s three main companies (SpaceX, SolarCity Corp., and Tesla) has been underpinned by $4.9 billion dollars in government subsidies (Hirsch, 2015). In the nascent field of space tourism, Cohen (2017) argues that what began as an almost entirely private venture quickly ground to a halt in the face of insurmountable technical and financial obstacles, only solved by piggybacking on large state-run projects, such as selling trips to the International Space Station, against the objections of NASA scientists. The business model of NewSpace depends on the taxpayer’s dollar while making pretensions to individual self-reliance. The vast majority of present-day clients of private aerospace corporations are government clients, usually military in origin. Furthermore, the bulk of rocket launches in the United States take place on government property, usually operated by the US Air Force or NASA.13

This inward tension between state dependency and capitalist autonomy is itself a product of neoliberalism’s contradictory demand for a minimal, “slim” state, while simultaneously (and in fact) relying on a state reengineered and retooled for the purposes of capital accumulation (Wacquant, 2012). As Lazzarato writes, ‘To be able to be “laissez-faire”, it is necessary to intervene a great deal' (2017, p. 7). Space libertarianism is libertarian in name only: behind every NewSpace venture looms a thick web of government spending programs, regulatory agencies, public infrastructure, and universities bolstered by research grants from the state. SpaceX would not exist were it not for state-sponsored contracts of satellite launches. Similarly, in 2018, the US Defense Advanced Research Projects Agency (DARPA)—the famed origin of the World Wide Web—announced that it would launch a ‘responsive launch competition', meaning essentially the reuse of launch vehicles, representing an attempt by the state to ‘harness growing commercial capabilities' and place them in the service of the state’s interest in ensuring ‘national security' (Foust, 2018b).

This libertarianism has been steadily growing in the nexus between Silicon Valley, Stanford University, Wall Street, and the Washington political establishment, which tend to place a high value on Randian ‘objectivism' and participate in a long American intellectual heritage of individualistic ‘bootstrapping' and (allegedly) gritty self-reliance. But as Nelson and Block (2018, p. 189–197) recognize, one of the central symbolic operations of capitalistkind resides in concealing its reliance on the state by mobilizing the charm of its entrepreneurial constituents and the spectacle of space. There is a case to be made for the idea that SpaceX and its ilk resemble semi-private corporations like the British East India Company. The latter, “incorporated by royal charter from Her Majesty Queen Elizabeth I in 1600 to trade in silk and spices, and other profitable Indian commodities,” recruited soldiers and built a ‘commercial business [that] quickly became a business of conquest' (Tharoor, 2017). SpaceX, too, is increasingly imbricated with an attempt on the part of a particular state, the United States, to colonize and appropriate resources derived from a particular area, that of outer space; it, too, depends on the infrastructure, contracts, and regulatory environment that thus far only a state seems able to provide. Its private character, like that of the East India Company, is troubled by being deeply embedded in the state. As one commentator has observed of SpaceX, ‘If there’s a consistent charge against Elon Musk and his high-flying companies…it’s that they’re not really examples of independent, innovative market capitalism. Rather, they’re government contractors, dependent on taxpayer money to stay afloat' (cit. Nelson and Block, 2018, p. 189).

Perhaps this should not come as a surprise. As Bourdieu (2005, p. 12) observed, ‘The economic field is, more than any other, inhabited by the state, which contributes at every moment to its existence and persistence, and also to the structure of the relations of force that characterize it'. The state lays out the preconditions for market exchanges. Under neoliberalism, the state is the preeminent facilitator of markets. The neoliberal state is not so much a Minimalstaat, night watchman state, or slim state as it is the prima causa of market society (see, e.g., Wacquant, 2012). Similarly, in the political theory of Deleuze and Guattari, any economic development presupposes the political differentiation caused by the state (Deleuze and Guattari, 2004a, p. 237–238). Even in the global environment of contemporary capitalism, the market cannot operate without the state becoming integrated with capitalism itself, as ‘it is the modern state that gives capitalism its models of realization' (Deleuze and Guattari, 2004b, p. 480). For capitalism to survive in outer space, the state must create a regulatory environment, subsidize infrastructure, and hand down contracts – in short, assemble outer space as a domain made accessible in legal, technical, and economic ways.

#### Otherwise, planetary colonialism and extinction from biosphere collapse and ecological breaking points are inevitable.

Shammas and Holen 19 [(Victor L, a sociologist working at the Department of Sociology and Human Geography, University of Oslo; Tomas B., independent scholar in Oslo, Norway) “One giant leap for capitalistkind: private enterprise in outer space,” 1-29-2019, pg. 6-8] TDI

As Earth’s empty spaces are filled, as our planet comes to be shorn of blank places, capitalistkind emerges to rescue capitalism from its terrestrial limitations, launching space rockets, placing satellites into orbit, appropriating extraterrestrial resources, and, perhaps one day, building colonies on distant planets like Mars. But why limit ourselves to Mars? As of mid-2017, NASA’s Kepler observatory had discovered more than 5000 exoplanets—planets that seem like promising alternatives to Earth, located at an appropriate distance from their respective suns in the famed ‘Goldilocks zone'. These ‘planetary candidates', as they are known —that is, candidates for the replacement of Earth, capable of supporting human life with only minimal technological augmentation or cybernetic re-engineering—are above all viable candidates for selection by specific capitalists seeking to discover new profitable ventures beyond the limits of an Earth-bound capitalism. Space reveals the impotence of the neoliberal, postFordist state, its incapacity and unwillingness to embark on gigantic infrastructural projects, to project itself outwards, and to fire the imagination of (actual) humankind. Capitalistkind steps in to fill the vacuum left behind by a state that lacks what Mann (2012, p. 170) calls ‘infrastructural power'. The old question, the question of Old Space, was quite simply: is this planet a viable site for humankind, a suitable homeland for the reproduction of human life away from Earth? But the new question, the question for NewSpace, will be: can this celestial body support capitalistkind? Will it support the interests of capitalist entrepreneurs, answering to the capitalist desire for continued accumulation?

While some elements of the astrosociological community, such as the Astrosociology Research Institute (ARI),14 insist on elucidating the “human dimension” in outer space, Dickens and Ormrod recognize that this humanization-through-capitalism really involves the ‘commodification of the universe' (2007b, p. 2). While Dickens and Ormrod develop similar arguments to those sketched here—from their concept of an ‘outer spatial fix' to their argument about outer space becoming woven into circuits of capital accumulation—they were writing at a time when their remarks necessarily remained speculative: the commercialization of space was still in its infancy. In an inversion of Hegel’s owl of Minerva, reality has since largely confirmed their ideas and caught up with theory. Above all, when considering the various ventures ongoing in space today, it is not so much the universalizing human dimension as the specifically capitalist dimension that is striking. With the advent of NewSpace, outer space is becoming not the domain of a common humanity but of private capital.

The arguments laid out above mirror an ongoing turn in critical scholarship away from the notion of the Anthropocene towards a more rigorously political-economic concept of Capitalocene, premised on the ‘claim that capitalism is the pivot of today’s biospheric crisis' (Moore, 2016, p. xi). Just as the exponents of the concept of Capitalocene emphasize that it is capitalism, and not humanity as such, that is the driving force behind environmental transformation, so too does the notion of capitalistkind emphasize that it is not humankind tout court but rather a set of specific capitalist entrepreneurs who are acting as the central transformative agents of and in outer space, with the ‘ever-increasing infiltration of capital' into what was formerly the domain of the state (Dickens and Ormrod, 2007a, p. 6). We can also think about these issues in terms of what Philippopoulos-Mihalopoulos (2015) terms ‘spatial justice'. This concept captures the fact that struggles over justice are often struggles to occupy space, as the term is more conventionally understood, as with urban battles over the ‘right to the city' (Harvey, 2008), to provide just one example. But the same also holds true for outer space: there is an ongoing struggle over the right to take up space in outer space. So far, the capitalist side appears to be winning. As the proto-communism of the Cold War-era Outer Space Treaty is abandoned—in tandem with the increased technological feasibility of exploiting resources and accumulating profits in outer space—spatial justice in outer space increasingly comes to mean the ‘justice' of capital, capitalistkind taking the place of humankind. It is comparatively easy to declare that outer space is a commons, as the Outer Space Treaty did in the late 1960s, when that domain is, for all practical purposes, inaccessible to capital; with the heightened accessibility of outer space, however, it is unsurprising that central political agents, such as President Trump’s administration, should seek to dismantle this regulatory framework and ensure the smooth functioning of capital accumulation beyond the terrains of Earth.

What kind of capitalism is being projected into space? The complexity of state-market relations is sufficient to force us to hedge against a simplified reading of space commercialization: it is not a matter of states against markets, as if the two were mutually exclusive. Instead, as Bratton (2015) suggests, we are witnessing the emergence of a ‘stack', a complex intertwining of commercial, geopolitical, and technological concerns, which challenges previous notions of state sovereignty. This can be seen as a hybridized state-market form, with technology playing a central role in reciprocal processes of political and economic transformation. On the one hand, outer space was in some sense always already the domain of marketization, albeit to a limited extent, even during the Cold War, from the first commercial satellite launch in the early 1960s to President Ronald Reagan’s implementation of the Commercial Space Launch Act of 1984, which aimed to encourage private enterprise to take an interest in an emerging launch market. As Hermann Bondi, the head of the European Space Organization, wrote in the early 1970s, ‘It is clear…that there must be three partners in space, universities and research institutions on the one hand, the government on the second and industry on the third' (Bondi, 1971, p. 9).

On the other hand, outer space still remains firmly within the domain of the state and is likely to do so for the foreseeable future, with the likely continued importance of military uses of satellite technology and the weaponization of Earth’s orbit— crucially, the Outer Space Treaty only prohibits nuclear arms and other ‘weapons of mass destruction' in space, not conventional weapons, such as ballistic missiles. One novel element in this phase of capitalism-in-space is the interrelationship between Silicon Valley, NewSpace, and the state (see, e.g., Vance, 2015). Silicon Valley’s capitalist class, including Amazon’s Jeff Bezos, play an outsize role in NewSpace. Behind and around these figures, however, remains the state—through its weighty fiscal, regulatory, military, and symbolic investments.15 To take but one example: In June 2018, SpaceX won a $130 million contract with the U.S. Air Force to launch an ‘Air Force Space Command' satellite onboard a Falcon Heavy rocket (Erwin, 2018).

Fredric Jameson’s (2003, p. 76) oft-quoted observation that it is easier to imagine the end of humankind than the end of capitalism, is realized in the ideals and operations of capitalistkind. Elon Musk has observed that the goal of SpaceX is to establish humankind as a ‘multiplanetary species with a self-sustaining civilization on another planet' whose purpose is to counteract the possibility of a ‘worst-case scenario happening and extinguishing human consciousness' (Vance, 2015, p. 5). But couldn’t we view this idealistic assertion on behalf of humanity in another way? It is not human consciousness, over and against what the writer Kim Stanley Robinson (2017, p. 2) calls ‘mineral unconsciousness' (i.e., the mute, geological reality of the natural universe), so much as a specifically capitalist consciousness that is at stake. While the actions of capitalistkind may primarily be aimed at ensuring the future survival of the human species, an additional result is to ensure that the very idea of capitalism itself will outlive a (distantly) possible extinction event. Capitalism is a self-replicating system, pushing to expand ever outwards, using a territorializing strategy of survival. As David Harvey notes, ‘a steady rate of growth is essential for the health of a capitalist economic system, since it is only through growth that profits can be assured and the accumulation of capital be sustained' (1990, p. 180). In this respect, outer space is ideal: it is boundless and infinite. As Earth comes to be blanketed by capital, it is only to be expected that capital should set its sights on the stars above. The actions of capitalistkind serve to bolster the capitalist mode of production and accumulation: it is not only life but capital itself that must outlive Earth—even into the darkness of space.

#### Ecological collapse causes extinction – it’s try or die to break an unsustainable system

Klein 14[(Naomi Klein, award-winning journalist, syndicated columnist, former Miliband Fellow at the London School of Economics, member of the board of directors of 350.org), *This Changes Everything: Capitalism vs. the Climate*, pp. 12-14]

In a 2012 report, the World Bank laid out the gamble implied by that target. “As global warming approaches and exceeds 2-degrees Celsius, there is a risk of triggering nonlinear tipping elements. Examples include the disintegration of the West Antarctic ice sheet leading to more rapid sea-level rise, or large-scale Amazon dieback drastically affecting ecosystems, rivers, agriculture, energy production, and livelihoods. This would further add to 21st-century global warming and impact entire continents.” In other words, once we allow temperatures to climb past a certain point, where the mercury stops is not in our control.¶ But the bigger problem—and the reason Copenhagen caused such great despair—is that because governments did not agree to binding targets, they are free to pretty much ignore their commitments. Which is precisely what is happening. Indeed, emissions are rising so rapidly that unless something radical changes within our economic structure, 2 degrees now looks like a utopian dream. And it’s not just environmentalists who are raising the alarm. The World Bank also warned when it released its report that “we’re on track to a 4-C warmer world [by century’s end] marked by extreme heat waves, declining global food stocks, loss of ecosystems and biodiversity, and life-threatening sea level rise.” And the report cautioned that, “there is also no certainty that adaptation to a 4-C world is possible.” Kevin Anderson, former director (now deputy director) of the Tyndall Centre for Climate Change, which has quickly established itself as one of the U.K’s premier climate research institutions, is even blunter; he says 4 degrees Celsius warming—7.2 degrees Fahrenheit—is “incompatible with an organized, equitable, and civilized global community.”¶ We don’t know exactly what a 4 degree Celsius world would look like, but even the best-case scenario is likely to be calamitous. Four degrees of warming could raise global sea levels by 1 or possibly even 2 meters by 2100 (and would lock in at least a few additional meters over future centuries). This would drown some island nations such as the Maldives and Tuvalu, and inundate many coastal areas from Ecuador and Brazil to the Netherlands to much of California and the northeastern United States as well as huge swaths of South and Southeast Asia. Major cities likely in jeopardy include Boston, New York, greater Los Angeles, Vancouver, London, Mumbai, Hong Kong, and Shanghai.¶ Meanwhile, brutal heat waves that can kill tens of thousands of people, even in wealthy countries, would become entirely unremarkable summer events on every continent but Antarctica. The heat would also cause staple crops to suffer dramatic yield losses across the globe (it is possible that Indian wheat and U.S. could plummet by as much as 60 percent), this at a time when demand will be surging due to population growth and a growing demand for meat. And since crops will be facing not just heat stress but also extreme events such as wide-ranging droughts, flooding, or pest outbreaks, the losses could easily turn out to be more severe than the models have predicted. When you add ruinous hurricanes, raging wildfires, fisheries collapses, widespread disruptions to water supplies, extinctions, and globe-trotting diseases to the mix, it indeed becomes difficult to imagine that a peaceful, ordered society could be sustained (that is, where such a thing exists in the first place).¶ And keep in mind that these are the optimistic scenarios in which warming is more or less stabilized at 4 degrees Celsius and does not trigger tipping points beyond which runaway warming would occur. Based on the latest modeling, it is becoming safer to assume that 4 degrees could bring about a number of extremely dangerous feedback loops—an Arctic that is regularly ice-free in September, for instance, or, according to one recent study, global vegetation that is too saturated to act as a reliable “sink”, leading to more carbon being emitted rather than stored. Once this happens, any hope of predicting impacts pretty much goes out the window. And this process may be starting sooner than anyone predicted. In May 2014, NASA and the University of California, Irvine scientists revealed that glacier melt in a section of West Antarctica roughly the size of France now “appears unstoppable.” This likely spells down for the entire West Antarctic ice sheet, which according to lead study author Eric Rignot “comes with a sea level rise between three and five metres. Such an event will displace millions of people worldwide.” The disintegration, however, could unfold over centuries and there is still time for emission reductions to slow down the process and prevent the worst. ¶ Much more frightening than any of this is the fact that plenty of mainstream analysts think that on our current emissions trajectory, we are headed for even more than 4 degrees of warming. In 2011, the usually staid International Energy Agency (IEA) issued a report predicting that we are actually on track for 6 degrees Celsius—10.8 degrees Fahrenheit—of warming. And as the IEA’s chief economist put it: “Everybody, even the school children, knows that this will have catastrophic implications for all of us.” (The evidence indicates that 6 degrees of warming is likely to set in motion several major tipping points—not only slower ones such as the aforementioned breakdown of the West Antarctic ice sheet, but possibly more abrupt ones, like massive releases of methane from Arctic permafrost.) The accounting giant PricewaterhouseCoopers as also published a report warning businesses that we are headed for “4-C , or even 6-C” of warming.¶ These various projections are the equivalent of every alarm in your house going off simultaneously. And then every alarm on your street going off as well, one by one by one. They mean, quite simply, that climate change has become an existential crisis for the human species. The only historical precedent for a crisis of this depth and scale was the Cold War fear that we were headed toward nuclear holocaust, which would have made much of the planet uninhabitable. But that was (and remains) a threat; a slim possibility, should geopolitics spiral out of control. The vast majority of nuclear scientists never told us that we were almost certainly going to put our civilization in peril if we kept going about our daily lives as usual, doing exactly what we were already going, which is what climate scientists have been telling us for years. ¶ As the Ohio State University climatologist Lonnie G. Thompson, a world-renowned specialist on glacier melt, explained in 2010, “Climatologists, like other scientists, tend to be a stolid group. We are not given to theatrical rantings about falling skies. Most of us are far more comfortable in our laboratories or gathering data in the field than we are giving interviews to journalists or speaking before Congressional committees. When then are climatologists speaking out about the dangers of global warming? The answer is that virtually all of us are now convinced that global warming poses a clear and present danger to civilization.”

#### Fetishization of the US technocratic order fuels Sinophobic techno-Orientalist imaginary – only a break from the capitalocene prevents a conflict driven by Western threat construction

Siu and Chun 20 [(Lok, is a cultural anthropologist and Associate Professor of Ethnic Studies at UC Berkeley; Claire, is a Ph.D. student at the University of California, Berkeley in the Department of Ethnic Studies) “Yellow Peril and Techno-orientalism in the Time of Covid-19: Racialized Contagion, Scientific Espionage, and Techno-Economic Warfare,” October 2020, pg. 425-427] TDI

The term yellow peril emerged in the late nineteenth century in response to Japan’s arrival to the geopolitical stage as a formidable military and industrial contender to the Western powers of Europe and the United States.9 The concept was further elaborated and given a tangible racial form through Sax Rohmer’s series of novels and films that provided the early content for the social imaginary of “yellow peril” along with its personification in the character of Dr. Fu Manchu, the iconic supervillain archetype of the Asian “evil criminal genius,” and his cast of minions.10 Strikingly, Dr. Fu Manchu’s characterization as evil, criminal, and genius continues to inform the racial trope of the Asian scientist spy; and more recently, we may add to the list the bioengineer, the CFO, the international graduate student, to name just a few. Moreover, the notion of the non-differentiable “yellow” masses continues to function as a homogenizing and dehumanizing device of Asian racialization, which makes possible the transference of Sinophobia to Asian xenophobia.

In its inherent attempt to construct a racial other, “yellow peril” is more a projection of Western fear than a representation of an Asian object/subject, and in this sense, it may be better understood as a repository of racial affect that can animate a myriad of representational figures, images, and discourses, depending on context. Indeed, the images and discourses of yellow peril have surfaced multiple times throughout the twentieth century, capturing a multitude of ever-shifting perceived threats that range from the danger of military intrusion (i.e., Japanese Americans during WWII), economic competition (i.e., Chinese laborers in the late nineteenth century, Japan in the 1980s), Asian moral and cultural depravity (i.e., non-Christian heathens, Chinese prostitutes, opium smokers), to biological inferiority (i.e., effeminacy, disease carriers). As Colleen Lye observes, “the incipient ‘yellow peril’ refers to a particular combinatory kind of anticolonial [and anti-West] nationalism, in which the union of Japanese technological advance and Chinese numerical mass confronts Western civilization with a potentially unbeatable force.”11 Arguably, the yellow peril of today represents heightened Western anxieties around China’s combined forces of population size, global economic growth, and rapid technological-scientific innovation—all of which emerge from a political system that is considered ideologically oppositional to ours. The current context, we suggest, is best understood through the lens of techno-Orientalism.

When the idea of techno-Orientalism first appeared in David Morley and Kevin Robins’s analysis of why Japan occupied such a threatening position in Western imagination in the late 1980s, techno-Orientalism offered a framework to make sense of the technologically imbued racist stereotypes of Japan/the Japanese that were emerging within the context of Western fears and anxieties around Japan’s ascendancy as a technological global power. They proposed that if technological advancement has been crucial to Western civilizational progress, then Japan’s technological superiority over the West also signals a critical challenge to Western hegemony, including its cultural authority to control representations of the West and its “others.” They claimed that the shifting balance in global power—the West’s loss of technological preeminence—has induced an identity crisis in the West. In response, techno-Orientalism, in which “[idioms of technology] become structured into the discourse of Orientalism,” is produced in large part to discipline Japan and its rise to techno-economic power.12 The United States, for instance, externalized its anxiety into xenophobic projections of Japan as a “culture that is cold, impersonal, and machine-like” in which its people are “sub-human” and “unfeeling aliens.”13 Techno-Orientalism, born from the “Japan Panic,” was effectively consolidated through and around political-economic concerns that frame Japanese and, by extension, Asian techno-capitalist progress as dangerous and dystopian.

Extending Edward Said’s concept of Orientalism,14 techno-Orientalism marks a geo-historical shift where the West no longer has control over the terms that define the East—the “Orient”—as weak, inferior, and subordinate to the West. It marks a shift not only in political-economic power but also in cultural authority. Techno-Orientalism, then, is the expressive vehicle (cultural productions and visual representations) by which Western and Eastern nations articulate their fears, desires, and anxieties that are produced in their competitive struggle to gain technological hegemony through economic trade and scientific innovation.15

Analogous to Japan’s position in the late 1980s, China currently figures into the techno-Orientalist imaginary as a powerful competitor in mass production, a global financial giant, and an aggressive investor in technological, infrastructural, and scientific developments. At the same time, the increasing purchasing power of China provokes American fear of a future global market that is economically driven by Chinese consumptive desires and practices. It is this duality—the domination of both production and consumption across different sectors of the techno-capitalist global economy—that undergirds American anxieties of a sinicized future.16

Further amplifying these anxieties around Chinese techno-economic domination is our imagination of China/the Chinese as the ultimate yellow peril, whose state ideology is oppositional to that of the United States and whose unmatched population size combined with its economic expansion and technological advancements may actually pose a real challenge to U.S. global hegemony. We turn now to examine how the ideology of yellow peril is manifesting in the current context of techno-Orientalism, beginning first with an analysis of the racial trope of “Chinese as contagion” and its connection to anti-Asian aggression.

#### Predictions fueled by realist accounts of space foreign policy as a battlefield of rational self-interest are wrong and neoliberal – prefer a Marxist interpretation.

Henry 18 [(Edward C., MA student at University of Massachusetts Boston) “The United States of Sol: Privatization as a Tool of American Hegemony in the Solar System,” 8-31-2018, pg. 54-61] TDI

Marxists argue behavior on the international level is not a natural process, instead it is a series of choices and actions. It is above all a function of the development in the capitalist system. According to Marxists the privatization of American outer space is a result of neoliberalism which began to dominate the American zeitgeist in the 1980s. Neoliberalism is defined by David Harvey as:

a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade.133

The institution of neoliberalism was elevated to the level of ‘common sense’ (on par with the promotion and protection of freedom) following the series of crises within capitalism through the 1960s and 1970s. Harvey utilizes ‘common sense’ through the Gramscian definition meaning ‘sense held in common.”134 This is significant particularly in the relationship with the word freedom. Moreover Harvey argues that “the word ‘freedom’ resonates so widely within the common-sense understanding of Americans that it becomes a ‘button that elites can press to open the door to the masses’ to justify almost anything.”135 Marxism allows for the examination of American outer space policy by looking at how its neo-liberal expansion is tied to class benefit interests. It highlights how neoliberalization is “…as a political project to re-establish the conditions for capital accumulation and to restore the power of economic elites.”136

Marxism critiques, which is the strength and the unique feature the theory brings to the conversation of American outer space privatization. Realism provides an explanation based on international behavior in relation to power dynamics, under an anarchic international system. An actor’s (a state) behaves rationally when it pursues its own self-interest which is the natural result of the anarchic system. The United States privatized its outer space efforts simply because it could following the loss of a geopolitical rival (the Soviet Union).

Prior to the privatization switch in the outer space rhetoric, “freedom” and the “betterment of humanity” were spread across the presidential speeches and congressional legislation. The language of “freedom” (protecting and promoting it and the critical nature of it) remained in the outer space rhetoric following the privatization shift, this time accompanying the language of deregulation and cost-cutting. Harvey argues, “common sense can...be profoundly misleading, obfuscating or disguising real problems under cultural prejudice. Cultural and traditional values can be mobilized to mask other realities.”137 Joining ‘deregulation’ with ‘freedom’ masks the economic impact and consequences of such an act.

By the time privatization appears in the NASA authorization bills of the early and mid 1990s, “neoliberalism has, in short, become hegemonic as a mode of discourse.”138 Meaning, the motivations and the language of neoliberalism dominate. This is seen in the U.S. Congress declaring free-market principles as the only way to develop low-Earth orbit.

Marxism would thus explain the privatization switch in the outer space rhetoric as one piece of the larger retraction of the American state through the 1980s. The Volcker Shock in 1979 kicked off the neoliberal process by drastically changing U.S. monetary policy and leading the charge in the “unfolding of government policies in many other arenas.”139 Reagan’s 1980 election added political weight to this new movement with a particular focus on “deregulation, tax cuts, budget cuts, and attacks on trade unions and professional power.”140 Harvey continues that “it took less than six months in 1983 to reverse nearly 40 percent of the decisions made during the 1970s that had been, in the view of business, too favourable to labour. Reagan constructed all regulation (except for labour) as bad.”141 Outer space exploration was merely the next frontier of deregulation and the retraction of the state, to create room for newly freed commercial enterprise. Deregulation and free enterprise became common sense.

Such a transformation of social and economic behavior is neither an accident nor a natural outcome. Harvey argues:

For any way of thought to become dominant, a conceptual apparatus has to be advanced that appeals to our intuitions and instincts, to our values and our desires, as well as to the possibilities inherent in the social world we inhabit. If successful, this conceptual apparatus becomes so embedded in common sense as to be taken for granted and not open to question.142

Neoliberalism as an institution and theoretical approach became the dominant form of thought through joining with existing approaches, namely the promotion and protection of the ambiguous “freedom.” Freedom, as an abstract and ever-changing concept is a long piece of “U.S. tradition” that aligned closely with founding scholars of neoliberalism: “the founding figures of neoliberal thought took political ideals of human dignity and individual freedom as fundamental…”143 Beginning with Reagan and continuing through each subsequent presidential administration, the exploration of outer space through commercial partners is tied directly the promotion of freedom.

Marxist theory offers a new way to understand the concept of conquest of the American “frontier” that is referenced across the outer space rhetoric. Kennedy and George W. Bush cite the Lewis and Clark expedition in reference to grand plans for outer space exploration. Anna Tsing defines the frontier as “an edge of space and time: a zone of not yet - not yet mapped, not yet regulated...Frontiers aren’t just discovered at the edge; they are projects in the making of geographical and temporal experience.”144 Outer space is the frontier.

Tsing’s description of the frontier is significant to the neoliberal expansion into outer space in two ways. First, frontiers are crafted and created, a result of a deliberate decision by the actors involved (namely, the state). Declaring outer space as a “frontier” comes from a purposeful process of deregulation with the goal to enclose the ‘common’ land. Outer space is not a part of the global commons, nor is its potential wealth. And second, the allure of claiming a piece of the frontier is a powerful motivator, especially under the “freedom” of private exploitation. The frontier becomes a zone, unregulated, shifting between “...public and private ownership.”145 Outer space, under the Outer Space treaties, cannot be claimed as sovereign territory by any one state, but the interpretation is debated on private property claims.

Private property is key to market development. From the neoliberal viewpoint, “the absence of clear private property rights...is seen as one of the greatest of all institutional barriers to economic development and to the improvement of human welfare.”146 Following the res nullius interpretation of the common heritage principles (specifically regarding the sovereignty ban) allows the United States to establish a legal (American) pathway for its corporate actors to extract space resources and claim them as their own - the 2015 SPACE Act. The United States argues such a maneuver does not extend state sovereignty, merely that it is creating a “free” market for its own companies to exploit unclaimed territory (a frontier).

The United States is extending, at a minimum, its sphere of influence. American actors are legally authorized (under American law) to extract any outer space resource they can obtain. The American government has declared through national space security policies that the American government will act to defend its interests and citizens (aka commercial actors) in outer space. The American state is acting to protect private property claims, to keep outer space deregulated, and to extend “free” market principles into low-earth orbit. The American state is making deliberate choices to further neoliberal practices.

Deregulated markets become the focus, after all “the assumption that individual freedoms are guaranteed by freedom of the market and of trade is a cardinal feature of neoliberal thinking, and it has long dominated the US stance towards the rest of the world.”147 And, should a market not exist, then it must be created by the state.148 Post1990, the American government is actively seeking to create a market in outer space. This is seen through the legislative requirement that the presidency consults the commercial outer space industry on favorable regulation and the desire to turn the International Space station over to commercial enterprises - under the principles of a ‘free’ market.

A Marxist examination of outer space privatization counters the realist claim of a natural, rational approach to international power politics. International action is instead a series of decisions made by individuals, communities, and organizations, which in turn influence the international system. Marxism focus on the role of neoliberal economics in the foreign policy of the United States. David Harvey traces the rise of neoliberalism through the crisis of capital, showing how deregulation and market expansion subsumed the language of freedom. Anna Tsing argues how the declaration of a frontier plays into capital expansion. The delineation of private property becomes key.

Private property is at the heart of the tension in the international outer space treaties and the common heritage principles. The United States, as a signatory to four of the five treaties and reiterated through Congressional legislation, has agreed to the ban on unilateral sovereignty claims. However, allowing private entities to extract resources, claim them, and profit off of them raises questions of de facto sovereignty in light of declared American protection of its citizens (including its corporations). The realist theoretical approach can provide insight into surface reasons of why the American state signed and ratified the first four outer space treaties, cooperated with and depended on a former rival (Russia) in outer space exploration following the Cold War, and even why American private enterprises are allowed to launch their own equipment. But, the answers are surface and unsatisfying. Marxism fills the gap left by realism. Marxism shows how the rise of neoliberalism directly influenced American domestic and foreign policy. The privatization shift in American outer space exploration was not a simple regulatory change to allow commercial actors to launch into outer space. The shift was a retreat of the state from the realm of outer space. It was the near complete deregulation of outer space in the specific interest of market expansion. The common territory of outer space was made open for private claim by American actors; the American state had become a neoliberal state. The American state has opened outer space to capitalist conquest (at the expense of human ownership) through privatization outer space exploration.

#### Reject 21st century Red Scares – neoliberalism undergirds a massive network of bunk scholars, organizations, and defense contractors who spin false narratives of revisionism and idealize liberal hegemony for profit

Johnson-Freese 17 [(Joan, Professor and chair of space science and technology @ Naval War College) Space Warfare in the 21st Century, Routledge, 2017, ISBN 978131552917] TDI

The industrial side of the military–industrial complex is comprised of corporations with common interests and distinguishable characteristics from other sectors of transnational capital. They are overwhelmingly dependent on military sales as a percentage of total sales revenue. As of 2012, arms sales accounted for over half of the total sales of Lockheed Martin (76 percent), BAE Systems (95 percent), Raytheon (92 percent), General Dynamics (66 percent), and Northrop Grumman (77 percent). Their products are not easily transferrable to consumer uses and so they are dependent on government contracts. At least 9 of the 25 largest US defense firms have a significant aerospace focus: CACI International, ManTech, Rockwell Collins, Exelis, Computer Science Corporation, Raytheon, General Dynamics, Boeing, and Lockheed Martin.6 The political implications of this are stark. These companies inherently have a vested interest in maintaining and expanding systems, including weapons systems, which absent clear and direct external threats, may have limited political justification. Additionally, government counterparts to these for-profit companies have concurrently grown—some might even say, “become bloated”—and in many cases, a codependent relationship has developed between them. Since the United States began maintaining a large standing military after World War II, the general attributes of US foreign policymaking have both expanded and intensified the influence of the military–industrial complex. Foreign policy decision-making is supported by a complex array of institutions whose very existence is predicated on and justified by the presence of a broad spectrum of threats from individual terrorists to be hunted down on the ground and with drones to near-peer competitors which must be countered with overwhelming air, naval, and space power. The government agencies and offices with a role in national security have expanded from inner circle policymakers to entire bureaucracies. The National Security Council staff has grown consistently since the Carter Administration from a small secretariat of less than 20 individuals to over 400 people during the Obama Administration. Post 9/11, the military created a Northern Command (USNORTHCOM) in 2002 to defend the homeland and the Department of Homeland Security (DHS) was stood up “to ensure a homeland that is safe, secure, and resilient against terrorism and other hazards”; these other hazards have come to include the safety hazards of deep-frying turkey and assuring that souvenir shirts sold at the Super Bowl are not Chinese knockoffs.7 DHS is now the third-largest government bureaucracy, employing more than 240,000 people. There are 17 different intelligence agencies occupying 33 building complexes, the equivalent of almost 3 Pentagons or 22 Capitol Buildings, and the intelligence community continues to expand.8 The Pentagon, with its some 23,000 military and civilian personnel, is only the hub of a Roman Empire-like division of the world into geographic military commands, the United States being the only country in the world brazen enough to create such commands. The sheer numbers of individuals, institutions, organizations, bureaucracies, and companies with a vested interest in preserving the self-licking ice cream cone9 that the ever-expanding military–industrial complex has become continues to expand. Government offices like the State Department’s Bureau of Diplomatic Security hire private military contractors from such companies as DynCorp International, Tigerswan, Triple Canopy, and Blackwater to protect diplomats and perform security functions. Employees of these companies are often retired Special Forces operators. Companies like Kellogg, Brown and Root (KBR), formerly a subsidiary of Haliburton and where former Vice President Dick Cheney was once CEO and Chairman, is an engineering, procurement, and construction company doing everything from building embassies to supplying military bases. Think tanks, consulting firms, and lobbying firms focused on defense and security issues have proliferated as well in terms of both quantity and investments. Members of Congress, traditionally elected largely according to the number of jobs they can bring home to their districts—and the campaign contributions they can raise—are part of the witches brew as well as they are largely supportive of defense contracts and the jobs those contracts bring. “Job loss” is among the first claims made by defense contractors in their appeals to Members of Congress when defense budget cuts or sequestration are threatened. Further, retired Members and their staffs are not immune to the lure of high-paying lobbying jobs. Defining Threats There is a wide breadth of individuals and institutions with a vested interest in maintaining threats to the United States that justify a significant defense budget. During the transition to the post-Cold War period, the US military was faced with potentially substantial cuts to military spending: the “peace dividend.” Consequently, the military suddenly found itself talking about taking on military operations other than war (MOOTWA), an acronym and job description that warriors found distasteful at best. Former Secretary of Defense Robert McNamara and other former Defense Department officials suggested that defense spending could safely be cut in half. Policy planning organizations with close ties to the military or military contractors—think tanks like RAND and the Center for Strategic and International Studies (CSIS)—were put to work to counter this claim and minimize budget cuts. They focused on the development of a new defense doctrine that would involve the retention of large-scale systems and big-ticket platforms like aircraft carriers, not just after the demise of the Soviet Union, but regardless of the short-term security environment. Contractors play an increasingly large part in the military–industrial complex as well. Political economist Ronald Cox explains the role of defense contractors in shaping that doctrine and defining threats—how the fox guards the henhouse in terms of threat identification: Military producers have a sustained relationship with key US foreign policy bureaucracies, especially the Defense Department. … The extent to which military contractors are embedded within the decision-making framework of identifiable bureaucracies within the US federal government makes their profit-making margins a function of the political process by which those departments and agencies identify long-term strategic threats.10 Thus, as considered in Chapter 1, defense strategies reflect needs but not necessarily national needs. Bureaucratic and corporate needs also play into definition of threats. Writing about the impetus to acquire nuclear weapons, Scott Sagan said, “bureaucratic actors are not … passive recipients of top-down political decisions; instead, they create the conditions that favor weapons acquisition.”11 Bruce DeBlois later applied that premise to space weapons, suggesting that “with an absence of clear top-down policy guidance on space weapons … military doctrine can build an inertia of its own, and impact – or even become – the default policy.”12 Also playing into the definition of long-term threats to US national security are think tanks—organizations often largely supported by the corporations themselves. Think tanks come in all varieties and sizes, some focused, some broad, some partisan, some not. The Heritage Foundation, for example, hosted a nine-city Defund Obamacare Town Hall Tour in 2013, headlined by Tea Party movement leader Jim DeMint, thereby clearly evidencing a partisan position. “Some [think] tanks on the left and the right of the ideological spectrum have grown so political that, to avoid losing their tax status as charitable organizations, they have established separate operations dedicated to lobbying and other advocacy work.”13 Some organizations, however, strive to be honest brokers of information in their areas of focus. The Secure World Foundation (SWF), for example, states its mission as “to work with governments, industry, international organizations, and civil society to develop and promote ideas and actions to achieve the secure, sustainable, and peaceful uses of outer space benefiting Earth and all its peoples.”14 Much of SWF’s ability to be nonpartisan and beyond the reach of corporate influence stems from it being privately funded. That is not the case with many organizations though. William Hartung and David Gibbs have written about the role of the largest defense contractors in the financing of conservative and neoconservative think tanks that have come to prominence in defense policy debates and discussions since the 1990s, and especially since 9/11; The Project for the New American Century (PNAC), the National Institute for Public Policy (NIPP), and the Center for Security Policy (CSP), for example.15 The Center for Security Policy receives onesixth of its funding from defense industries. CSP states on its website: The process the Center has repeatedly demonstrated is the unique ability that makes the Center the “Special Forces in the War of Ideas”: forging teams to get things done that would otherwise be for a small and relatively low-budget organization. In this way, we are able to offer maximum “bang for the buck” for the donors who make our work possible.16 While most think tanks declare their “intellectual independence,” the reality is that, even if they do not specifically declare an offer of “maximum bang for the buck” to their donors, they largely rely on corporate donations for their existence. Donors rarely support organizations advocating opposition views or producing information counter to their best interests. Relatively new on the block—and billing itself as “Bold. Innovative. Bipartisan.”17—is the Center for a New American Security (CNAS), founded by Dr. Kurt Campbell and Michele Flournoy in 2007. Both Campbell and Flournoy formerly served as heavy-hitters in the Obama Administration, Campbell in the State Department and Flournoy in the Defense Department. CNAS lists Boeing, the Carnegie Corporation, the Government of Japan, Northrup Grumman Aerospace Systems, and the Smith Richardson Foundation on its “honor roll” of those who have contributed more than $250,0000.18 Campbell and Flournoy are among the many former government employees who have gone on to create or work at think tanks. A strong overlapping relationship between the boards of directors of defense contractors, policy think tanks funded by these contractors, personnel in the Defense Department, and high-level cabinet executives is not uncommon.19 Reports and analyses prepared by these think tanks can weigh heavily in government policy decisions. The shaping of the post-Cold War defense posture, specifically in identifying new enemies, exemplifies the role of the expanded military–industrial complex to include influential corporations, think tanks, the Pentagon, and Members of Congress. Any doubt about the need for an identifiable enemy was firmly put to rest in March 1990 by Senator Sam Nunn, chairman of the Senate Armed Services Committee and an acknowledged ally of the military establishment. In a blistering attack on the Soviet-oriented military posture still officially embraced by Defense Secretary Cheney, Nunn charged that the Pentagon’s proposed spending plans were rendered worthless by a glaring “threat blank”—an unrealistic and unconvincing analysis of future adversaries.20 A 1988 CSIS report had warned against “maverick regimes,” a warning that was resurrected and amplified in response to Nunn’s charge. Reaching back to the Reagan Administration, these “maverick,” soon to be renamed “rogue,” regimes initially included Iran, Libya, North Korea, Cuba, and Nicaragua. Subsequently, the Rogue Doctrine was laid out in White House Fact Sheet in March 1990; it posited that the United States would continue to face considerable post-Cold War security threats, namely from states in the developing world that possessed or potentially would posses weapons of mass destruction and the capability to threaten vital US geostrategic interests in key regions.21 Iraq was added to the list later in the 1990s. Still, regardless of how dangerous they were, rogue states did not justify aircraft carriers and other big-ticket items. Large-scale Cold War weapons programs consequently declined by 17 percent under George H. W. Bush and by 12 percent during the first term of the Clinton Administration.22 That problem had to be addressed. Again, Sam Nunn led the charge to identify at least one worthy new opponent of the United States—one that could justify the retention of a large military structure, platforms, and expensive weapons systems. Concurrent to development of the Rogue Doctrine, Nunn had begun working toward that end with Chairman of the Joint Chiefs of Staff Colin Powell in 1988. Eventually, a new class of states called “emerging regional powers” was identified to include Argentina, Brazil, China, Egypt, India, Iran, Iraq, Israel, Libya, Pakistan, South Africa, Syria, Taiwan, Turkey, and the two Koreas. Each had different national interests and philosophical underpinnings that, for one reason or another, had justified large growth in their military structures and/or the development of weapons of mass destruction.23 Some countries eventually became US allies and/or recipients of large amounts of US military aid. Others came to be considered as potential threats—more specifically near-peer competitors, particularly China—that the United States might at some point have to confront on the battlefield. Consequently, the United States moved almost seamlessly from the Cold War Containment Strategy to the Rogue Doctrine and identifying potential near-peer competitors. The Plethora of Players Defense and aerospace contractors responded to post-Cold War reduced business opportunities through a mixture of economic and political strategies. Economically, corporate restructuring, layoffs, division sell-offs, and mergers and acquisitions of other firms were among the strategies used, with the Defense Department helping to arrange financing for those mergers and acquisitions from as early as 1993. Those tactics, in combination with the wider economic trends of the 1990s, “contributed to a defense sector whose top four firms were receiving a higher share of DOD contracts than had been true for most of the post-World War II period,”24 even after the Cold War. Politically, however, a new enemy worthy of the United States, a near-peer competitor, still had to be identified. In his 2011 book Prophets of War: Lockheed Martin and the Making of the MilitaryIndustrial Complex, William D. Hartung considered the impact Lockheed Martin had on defense policy and the benefits the company and individual company leaders reaped from maintaining a high threat profile.25 During the post-Cold War transition from containment strategy to the Rogue Doctrine and emerging regional powers focus, then Martin Marietta CEO Norman Augustine led the charge to build what he called a “super-company.” While some companies tried to absorb defense spending “peace dividend” cuts by diversifying their base business, Augustine rejected that approach. He felt it was his patriotic duty to keep producing weapons for America and frequently referred to the weapons industry as “the fourth armed service.”26 Beyond acquiring a number of small companies, including the military division of General Electric, Martin Marietta and Lockheed merged in 1995. Martin was clearly the dominant partner as evidenced by Augustine being the new CEO, top management positions being filled by Martin employees, and the new headquarters being based at Martin’s Bethesda, Maryland headquarters. Augustine’s political connections were unmatched. While still running the world’s largest defense contractor, Augustine also served on the Defense Policy Advisory Committee on Trade (DPACT), a group advising the Secretary of Defense on arms export policies; was on the Defense Science Board (DSB), an advisory panel with the power to push forward or scrap emerging weapons programs based on performance; and was President of the Association of the United States Army, a politically robust interest group of retired military personnel and army contractors. Those political connections paid high returns during the transition. Augustine played a central role in convincing the Newt Gingrich-led, Republican-controlled Congress to allocate or add billions in funding to Lockheed Martin projects from the F-22 combat fighter to the “Star Wars” missile defense program. Perhaps his greatest coup, however, was persuading Congress to bankroll the major arms industry mergers that were occurring with taxpayer money for “restructuring costs,” a policy that yielded hundreds of millions of dollars in government support to the creation of Lockheed Martin. As a result of an obscure policy change contained in a one-page memo from John Deutsch, then the Undersecretary of Defense (and a former Augustine business associate), the Pentagon authorized federal funding for closing plants, relocating equipment, paying severance to laid-off workers, and providing “golden parachutes” to board members and executives affected by the merger.27 The policy was not published in the Federal Register, the standard repository of virtually every important government action, and it was enacted without notification to Congress. The benefits that accrued from that policy were both organizational and personal. Lockheed Martin, for example, benefited by almost $1.8 billion. Personally, Augustine was promoted from being CEO of Martin Marietta to being CEO of Lockheed Martin. However, because he “left” Martin as a result of a consolidation merger, he was compensated in the amount of $8.2 million, approximately $2.9 million of that coming from taxpayer dollars.28 The incestuous link between the Pentagon, Congress, and defense companies is sold as being good for America based on the number one concern of voters. Jobs. No one is more sensitive to “jobs” arguments than Members of Congress, with those arguments often presented by lobbyists. In 2015, corporations reported more than $2 billion in congressional lobbying expenditures. K Street in Washington, DC, where many lobbyists’ offices are located, is sometimes known as the “road to riches” for retired Members of Congress, congressional staffers, and military officers who largely populate their ranks. Today, the biggest companies have upwards of 100 lobbyists representing them, allowing them to be everywhere, all the time. For every dollar spent on lobbying by labor unions and public-interest groups together, large corporations and their associations now spend $34. Of the 100 organizations that spend the most on lobbying, 95 consistently represent business.29 More often than not, the job of the lobbyist is to convince Members of Congress that cutting whatever program they are lobbying for will result in job losses in the Members’ district. Unemployed voters aren’t happy voters. In 2011, the aerospace industry put out a report saying that chopping the defense budget would put over a million Americans out of work. Cuts that could total up to a trillion dollars over ten years would “devastate the economy and the defense industrial base and undermine the national security of our country,” said Marion Blakeley, president of the Aerospace Industries Association (AIA), which sponsored and paid for the report.30 While companies like Lockheed Martin and Boeing claim that the number of defense firm employees has dropped to about 10 percent from a peak of 14 percent in 2008, some of those job losses, as in the case of Boeing, have come through moving employees to the commercial side of the business. In other cases, jobs have been lost through divestitures such as Northrop’s spin-off of Huntington Ingalls. Based on executive salaries though, job losses do not seem to come because companies are financially strapped. In 2010, Boeing’s CEO Jim McNerney made $19.7 million while Lockheed Martin’s CEO Robert Stevens took home $19.1 million.31 Stevens made $25.3 million in compensation in 2011, which was more than all but two Wall Street CEOs.32 The revolving door doesn’t just go between industry and the Pentagon, but includes Congress as well. In his 2014 book This Town,33 chief national correspondent for the New York Times Magazine Mark Leibovich explains a lot about influence peddling with a simple statistic: In 1974, just 3 percent of retiring members of Congress became lobbyists; now, 50 percent of retiring Senators and 42 percent of retiring House members stay in DC and become lobbyists.34 Websites like OpenSecrets.com, affiliated with the Center for Responsive Government, publish the names of former members and who they now lobby for, or become “senior advisors” to, which is basically the same thing.35 Trent Lott, Dick Armey, Tom Daschle, Tom Foley, and Scott Brown are among the bipartisan former Members on their list. President George W. Bush signed the Honest Leadership and Fair Government Act in 2007, intended to limit former Members’ and staffers’ immediate ability to cash in on their insider information in lobbying positions. President Barack Obama called it “the most sweeping ethics reform since Watergate.”36 A key provision required ex-Senators and administration executives to wait two years and representatives to wait one year as a “cooling off period” before becoming lobbyists. But loopholes seem to create more of a sieve than a barrier, and according to a 2015 report by the Center for Responsive Government and the Sunlight Foundation, encourage a culture of “shadow lobbying.”37 Of the 104 former congressional members and staffers whose “cooling off” period ends during the first session of the 114th Congress, which opens today, 29 are already in government relations, “public affairs,” or serve as counsel at a firm that lobbies. And 13 of those are even registered as lobbyists, working to shape policy in Congress or the executive branch on behalf of paying clients.38 The door doesn’t just swing only from government to the private sector. It swings both ways. In 2011, Ann Sauer left her position as a Lockheed vice president and lobbyist with a compensation package of $1.6 million. Senator John McCain hired her as the key Republican staffer on the Senate Armed Services committee in February 2012.39 Industry associations also advocate policy positions benefiting their large and continually growing memberships. For example, the National Defense Industrial Association (NDIA) is an organization with 9,000 corporate affiliates, 26,000 individual members, and no foreign membership. “The Association maintains close coordination with the DOD functioning though 56 chapters and 34 committees, each with direct access and a working relationship with the DOD. Divided up among these contractors is the largest single slice of the federal government’s budget.”40 There are also a multitude of industry organizations and associations specifically related to aerospace. The American Institute of Aeronautics and Astronautics (AIAA) with “more than 30,000 individual members from 88 countries, and 95 corporate members … is the world’s largest technical society dedicated to the global aerospace profession.”41 The Satellite Industry Association (SIA) bills itself as a unified voice on satellite industry policy, regulatory, and legislative issues. As a trade association representing the leading global satellite operators, service providers, manufacturers, launch service providers, and ground equipment suppliers … [SIA] actively promotes the benefits and uses of commercial satellite technology and its role in national security, homeland security, disaster relief and recovery, and the global information infrastructure and economy.42 There is an association or organization for every interest, oftentimes more than one. Many of the individuals staffing and connecting this multitude of organizations are retired military officers, many of them three- or four-star generals and admirals. Their rank provides them with substantive knowledge of the defense field and a career’s worth of Rolodex connections. For those seeking post-retirement consulting careers, that means access. According to retired Air Force General Gregory “Speedy” Martin, the practice of flag and general officers moving immediately to private sector jobs is both ethical and beneficial for American defense because it links private sector expertise with important Pentagon missions. “Access sounds sleazy, but it brings a value,” says Martin. “I am interested in doing things that I think the Air Force or [Department of Defense] might benefit from.”43 There is validity in what Gen. Martin says. Most Members of Congress and their staff have never served in the military and have little knowledge of, or even interest in, national security issues and needs unless it directly affects their district. While some staff and Members are or become very knowledge about national security and military issues, first-hand expertise from practitioners can be key to their education. Pentagon officials with broad portfolios of responsibility can also benefit from practitioner input on specific areas, especially technical areas like aerospace. The practice of exporting expertise from the military to the private sector is not inherently nefarious and, indeed, can serve the country. But the lines between education, advising, and persuasion are fine. That can be especially true when former flag officers, turned industry executives, visit the Pentagon. Their rank carries with it a sense of respect, indeed awe, from former subordinates who they are now courting for contracts. “When a general-turned-businessman arrives at the Pentagon, he is often treated with extraordinary deference—as if still in uniform—which can greatly increase his effectiveness as a rainmaker for industry. The military even has a name for it – the ‘bobblehead effect.’”44 Retired generals and admirals with a practiced command voice understand the persuasive effect their authoritative presence can have on former employees. The sheer number of these retired flag officers working as defense consultants or executives—sometimes referenced as “rent-a-general” practice—tells a story, with a significant increase shown during the fat budget years of the Gulf War. Between 2004 and 2008, 80 percent of three- and four-star officers joined defense firms upon retirement, up from less than 50 percent who followed that career path from 1994 to 1998. In some individual years, the move from senior military positions to the defense industry is a virtual clean sweep. In his 2010 investigative report for the Boston Globe, Bryan Bender found that 34 out of 39 three- and four-star generals and admirals who retired in 2007 went to work for defense firms—nearly 90 percent.45 In some specialized commands, this feeder system of military officers into lucrative defense jobs is so powerful that the same companies have hired successive generations of flag officers. Bender reported, for example, that the last seven generals and admirals responsible for controlling international arms sales at the Pentagon went to work post retirement as contractors selling weapons and defense technologies overseas. The rules governing post-retirement employment are part of federal statute 18 USC, section 207(c), that statute being known as the “revolving door” restriction. The Air Force explains this restriction in its post-retirement separation rules as follows: • This means that for one year after their service terminates, senior employees may not knowingly make, with the intent to influence, any communication or appearance before an employee of the agency in which they served in the year prior to their leaving, if the communication or appearance is made on behalf of any other person and official action by the agency is sought. • The purpose of this “cooling off” period is to allow for a period of adjustment for the former senior employee and personnel at the agency served and to diminish any appearance that government decisions are being improperly influenced by the former senior employee. • This restriction does not apply to “behind-the-scenes” assistance. However, it does not require that the former senior employee was “personally and substantially” involved in the matter that is the subject of the communication or appearance. • Instead, it applies to any representation back for the purpose of influencing employees at the agency that the employee just left.46 For two years after retirement, the Pentagon prohibits military officers from participating in “particular matters,” meaning ongoing contracts greater than $10 million that were under their command. But due to another convenient loophole, “new editions of older weapons systems are not considered ‘particular matters.’”47 Beyond loopholes, potential conflict of interest issues arise since these flag officers are often recruited for private sector employment well before they retire, raising questions about their independence in threat assessments, force planning, and general considerations of national interest versus the potential for postretirement gain. Further, the revolving door—perhaps more a blender than a door—is actually promoted and facilitated by the government with taxpayer money. Taxpayer-funded career seminars on how to network into private industry are held, for example, for Navy and Air Force flag officers on Coronado Island near San Diego, sometimes two full years before their retirement.48 Other retirees have been more peripherally involved with linking Pentagon needs to industry desires to fill those needs, acting as what was called Pentagon “Senior Mentors.” The Office of the Secretary of Defense defined a Senior Mentor as a retired flag, general or other military officer or senior retired military official who provides expert experienced-based mentoring, teaching, training, advice, and recommendations to senior military officers, staffs and students, as they participate in war games, warfighting courses, operational panning, operational exercises, and decision-making exercises.49 The Pentagon has stated that it increasingly needs and relies on these retired officer “mentors” to run war games and advise active duty commanders. But a series of media reports in 2010 raised issues about the program, specifically in terms of financial gains and conflicts of interest. In some cases, for example, if payment was made to a retired military officer through a defense company rather than directly, the military services didn’t even have to reveal the identity of the retiree. These were individuals who, in some instances, were making up to $440 an hour as mentors while drawing pensions as high as $220,000 per year and working full-time executive positions with defense companies.50 USA Today reported that of the 158 Senior Mentors they identified, 80 percent had financial ties to defense contractors, including 29 being full-time executives of defense companies. The Senate Armed Services committee took an interest in the Senior Mentors program, and soon thereafter, the Pentagon ordered a program overhaul.51 Consequently, Secretary of Defense Robert Gates announced sweeping changes to the program in April 2010. Mentors were to be converted to Highly Qualified Expert (HQE) positions and, consequently, were held responsible for complying with all applicable federal personnel ethics laws and regulations. Those regulations included financial disclosure statements and imposed a salary cap. The financial disclosure part included revealing employers, earnings, and stocks. The salary cap meant that a HQE could only be paid up to a specific authorized amount, an amount equivalent to the salary authorized for a four-star general officer on active duty—the most they could have made before moving to the private sector. Further, mentors became subject to federal rules designed to prevent conflicts of interest, such as prohibiting mentors from divulging nonpublic information to defense contractors or taking actions that have “a direct and predictable”52 effect on their private interests. In October 2011, the DoD Inspector General reported on compliance with the new policy, focusing on the Navy, Marine Corps, Joint Forces Command, Special Forces Command, and Strategic Command. The Army and Air Force were omitted as they were conducting their own compliance studies.53 Subsequent to the new rules being put into place, 98 percent of the retired officers from the Navy, the Marines, and three combatant commands left the Senior Mentor program. “It appears that, for at least some of the former military officers who dropped out the program, it’s clear which choice they made when it came to patriotism or money.”54 The kind of conflict of interest issue that had bothered the press and the Senate came up again in November 2011. Senator John McCain sent a letter to Defense Secretary Leon Panetta expressing concern about retired Air Force General turned Boeing executive Charles Robinson’s participation in a 2008 war game called Global Mobility “for a $51 billion aerial tanker contract Boeing was competing to win.”55 Boeing was later awarded the contract. McCain further criticized the Pentagon for taking two years to fulfill a FOIA request related to the subject. It is not just the Pentagon and defense firms who are keen to hire retired general officers. According to retired Army General Wesley K. Clark, private equity firms and Wall Street investors are also increasingly interested in enlisting retired flag officers as consequence of a broader phenomenon: the increasing importance of the military to America’s industrial base. “It’s the militarization of the economy,”56 Clark said; and he would know. Since leaving his position as NATO Supreme Allied Commander in 2000 and running for President from 2002 to 2004, Clark has worked for, often simultaneously, his own firm, Wesley K. Clark and Associates; the lobbying firm James Lee Witt Associates as Vice President and Senior Advisor; Rodman & Renshaw, eleventh largest investment bank in the United States, as former Chairman; Growth Energy, an alternative energy advocacy firm, as Co-Chairman; Geooptics LCC, an environmental data company, on the Board of Advisors; and the Blackstone Group, a private equity firm, as Senior Advisor. Clark is not alone in being sought after in the private equity, finance, and energy sectors. Retired Army General and former CIA Director David Petraeus was hired in 2013 by Kohlberg, Kravis, Roberts (KKR), a private equity firm specializing in leveraged buyouts, to head its KKR Global Institute. The role of the media—specifically, paying former military members to act as advisors for the media and spokespersons for Pentagon policy—must also be considered as part of the supporting cast of the military–industrial complex. Retired General Jack Keane, for example, appeared on Fox News nine times over a two-month period in 2014 to advocate for air strikes and special forces to defeat ISIS, declaring that a bolder strategy was required. He made similar calls for more military action before Congress. What was left unsaid by the media, though, (and in congressional witness disclosure forms) was that Keane had a very personal interest in seeing military activity ramped up. Keane is a special adviser to Academi, the contractor formerly known as Blackwater; a board member to tank and aircraft manufacturer General Dynamics where he was paid over $245,000 in 2013; a “venture partner” to SCP Partners, an investment firm that partners with defense contractors, including XVionics, an “operations management decision support system” company used in Air Force drone training; and president of his own consulting firm, GSI LLC.57 When the US military is involved in global conflicts, the firms that Keane is associated with benefit. Dean Ed Wasserman of the UC Berkeley Graduate School of Journalism was quoted in The Nation as saying, “I think an inclination to use military action a lot is something the defense industry subscribes to because it helps to perpetuate an overall climate of permissiveness towards military spending.”58 Those who profit from conflict certainly weren’t going to argue against it. The Pentagon has a track record of using the media for its own purposes as well. In 2002, during the run-up to the Iraq War, Assistant Secretary of Defense for Public Affairs Victoria Clarke launched a program to recruit “key influentials” (retired military officers) to help sell the war to the public. More than 75 individuals were eventually signed up to appear on television and radio shows as military analysts and/or to pen newspaper op–ed columns. Many of these analysts were also lobbyists for defense contractors. The Pentagon held weekly meetings with the analysts, providing them “street credibility.” The analysts benefited as the meetings indicated to their clients that they had personal access to the Pentagon, and they benefited the Pentagon by discouraging the analysts from questioning or criticizing Pentagon assertions. The arrangement worked well until New York Times reporter David Barstow reported on the program in 2008.59 As part of the investigation leading up to Barstow’s report, the newspaper sued the Defense Department and eventually gained access to 8,000 pages of e-mail messages, transcripts, and records describing years of private briefings, trips to Iraq and Guantánamo for the analysts, and an extensive Pentagon talking points operation. Barstow later won a Pulitzer Prize for his reporting. While issues regarding the military–industrial complex are evidenced across the board in defense policy and program decision-making, those that are space-related can be particularly noteworthy given their cost, endurance, and technical fatuity. When all the wheels are turning in the right direction, a program can become one of those highly lucrative self-licking ice cream cones. Missile defense provides an illustrative example of what that looks like. Within that strategic program, there are multiple smaller, related programs. Many endure for years before collapsing. The $5 billion Airborne Laser, the $1.7 billion Kinetic Energy Interceptor, and the 700 million Multiple Kill Vehicle were all canceled after no, or failed, testing.60 But yet the missile defense program lives on and is a testament to the persistence of its supporters.