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## cap

### Plan (25)

#### We affirm: The appropriation of Mars by private entities is unjust

#### 1. Mars should be established as *res communis* through the non-appropriation principle in the OST to prohibit private entity appropriation

van Eijk 20

Cristian van Eijk “Sorry, Elon: Mars is not a legal vacuum – and it’s not yours, either”, Völkerrechtsblog, 05.11.2020, doi: [10.17176/20210107-183703-0](https://doi.org/10.17176/20210107-183703-0). // HW AW

The principle of non-appropriation SpaceX risks breaching OST article II, the “cardinal rule” of space law ([Tronchetti, 2007](https://iislweb.org/docs/Diederiks2007.pdf" \t "_blank)). This principle is a jus cogens norm [(Hobe et al. 2009, pp. 255-6)](https://elibrary.bwv-verlag.de/book/99.105025/9783830522195) establishing Mars as res communis, rather than terra nullius. I must acknowledge, with tongue firmly in cheek, that SpaceX is partly correct – states have no sovereignty on Mars. But that does not leave Mars a “free planet” up for grabs – SpaceX has no sovereignty either. On plain reading, article II OST lacks clarity on two key points: i) whose claims are prohibited, and ii) what exactly constitutes a ‘claim of sovereignty’. The first has been answered; per the then-customary interpretative rules and travaux préparatoires, there is quite broad academic consensus ([Hobe, et al. 2017](https://elibrary.bwv-verlag.de/book/99.105025/9783830522195); [Tronchetti, 2007](https://iislweb.org/docs/Diederiks2007.pdf); [Pershing, 2019](https://digitalcommons.law.yale.edu/yjil/vol44/iss1/5/); [Cheney, 2009](https://perma.cc/W3QU-GMTY)) that **sovereign claims include those by private entities**. This is consistent with OST article VI; private entities act in space with state authorisation, and thus state authority. It also accords with the law of state responsibility, wherein conduct of entities exercising state authority is attributable to the state, even if ultra vires ([ARSIWA](https://legal.un.org/ilc/texts/instruments/english/draft_articles/9_6_2001.pdf) articles 5, 7). The second issue is more complex. Much has been written on whether claims to space [resources](https://www.universiteitleiden.nl/en/law/institute-of-public-law/institute-of-air-space-law/the-hague-space-resources-governance-working-group) or space property ([Nemitz v United States](https://opil.ouplaw.com/view/10.1093/law:ildc/1986us04.case.1/law-ildc-1986us04" \t "_blank)) are sovereign. In this case, the territorial claim is less clear; is establishing a jurisdiction a sovereign claim “by other means”? SpaceX purports not to create law horizontally via contract, but to establish the only law on Mars – a vertical structure endemic to sovereign legal orders. International caselaw on territorial acquisition agrees; sovereign acts include “legislative, administrative and quasi-judicial acts” (Case concerning sovereignty over Pulau Ligitan and Pulau Sipadan (Indonesia v. Malaysia), [para 148](https://www.icj-cij.org/public/files/case-related/102/102-20021217-JUD-01-00-EN.pdf); Decision regarding delimitation of the border between Eritrea and Ethiopia, [para. 3.29](https://legal.un.org/riaa/cases/vol_XXV/83-195.pdf)) with the exercise of jurisdiction and local administration having “particular, probative value” ([Minquiers and Ecrehos (France v. UK), p. 22](https://www.icj-cij.org/public/files/case-related/17/017-19531117-JUD-01-00-EN.pdf" \t "_blank)). Also relevant are attempts to exclude other states’ jurisdiction ([Island of Palmas (USA v. Netherlands), pp. 838-9](https://pcacases.com/web/sendAttach/714)). An attempt by SpaceX to prescribe its own jurisdiction on Mars would constitute a sovereign claim in breach of OST article II, and entail US responsibility for an internationally wrongful act. Of course, as Thom Cheney [points out](https://www.instagram.com/tv/CG71f4KjwSg/?utm_source=ig_web_button_share_sheet), this is all just words until it isn’t – but there is cause for concern. The Federal Communications Commission (FCC) has been consistently accommodating to commercial space actors, and to SpaceX [in particular](https://fcc.report/IBFS/SAT-MOD-20200417-00037/2274315.pdf), preferring to leave regulation up to markets rather than regulatory bodies. As Commissioner O’Rielly [said](https://docs.fcc.gov/public/attachments/FCC-18-164A1.doc) upon granting SpaceX market access: “our job at the Commission is to approve the qualified applications [by SpaceX et al.] and then let the market work its will.” It is not unforeseeable that the FCC would [prioritise](https://www.vice.com/en/article/z3bxx3/ajit-pai-still-thinks-killing-net-neutrality-was-a-brilliant-idea) corporate objectives over principle, and under an administration increasingly [dismissive](https://www.whitehouse.gov/briefings-statements/remarks-president-trump-74th-session-united-nations-general-assembly/) of the international rule of law, might fail to regulate SpaceX in case of breach. Both SpaceX’s actions or FCC inaction risk breaching OST article II, and could leave the US facing reparations claims from injured state(s). Mars nullius: A thought experiment But **this problem extends beyond the legal**. As previously mentioned, the OST, especially article II, designates Mars as res communis. This precludes territorial acquisition by occupation, which can only legitimately occur on terra nullius. But indulge me for a moment in a half-serious thought experiment. **No provision of outer space law explicitly designates Mars res communis**. The exploration and use of Mars is the “province of mankind” per OST article I (emphasis added), but that language was specifically diluted in negotiations from the originally-proposed “common heritage of mankind”. The Moon is the “common heritage of mankind” ([Moon Agreement](https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/moon-agreement.html), article 5), but only for [18 states](https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=XXIV-2&chapter=24&clang=_en). The United States has recently and repeatedly attempted to erode the status of space as res communis, including by [treaty](https://www.nasa.gov/specials/artemis-accords/img/Artemis-Accords-signed-13Oct2020.pdf) and by [Executive Order](https://www.whitehouse.gov/presidential-actions/executive-order-encouraging-international-support-recovery-use-space-resources/), and it is not alone. If current trends continue, Mars nullius may come sooner than we think. **That line between res communis and terra nullius is the principal legal obstacle to acquiring extra-terrestrial land by the legal process of occupation.** In territorial acquisition cases, international law distinguishes between the act of attempting to exercise jurisdiction or sovereignty (called an ‘effectivité‘), and the legal right to do so (sovereign title). The former is a question of fact; the latter is a question of law. Absent other sovereign claims, an effectivité compliant with international law is “as good as title” (Island of Palmas (USA v. Netherlands), [p. 839](https://legal.un.org/riaa/cases/vol_II/829-871.pdf); Frontier Dispute (Burkina Faso v. Mali), [para 63](https://www.icj-cij.org/public/files/case-related/69/069-19861222-JUD-01-00-EN.pdf)). Such an effectivité would contravene international law now, but that law is in flux. What if the current rule proves less-than-robust? As shown above, the elements of successful effectivité, state attribution and a sovereign act with sovereign intention, are satisfied. Slipping this provision on the future Martian legal order into satellite broadband Terms of Service serves little purpose – except as basis for a claim prior to some future critical date. Crucially, SpaceX is not an international actor. It is an American company subject to US law and continuing US supervision. In both [Island of Palmas](https://legal.un.org/riaa/cases/vol_II/829-871.pdf) and the [Pedra Branca Dispute](https://www.icj-cij.org/public/files/case-related/130/130-20080523-JUD-01-00-EN.pdf), corporations acting under national authorisation and regulation established sovereign titles for their respective states. A future attempt by SpaceX to act on its Terms could be received by other states, either legally or politically, as an American colonisation of Mars. Concerns and conclusions Three primary concerns emerge from this picture. First, **non-appropriation is cardinal for a reason – if breached, international peace and security in space hangs in the balance**. Second, **even signalling the implementation of a provision so contrary to US obligations without censure risks the international rule of law.** Finally, and most pragmatically, American vulnerability to future claims by other states should concern American citizens; it is their money, their national reputation on the line. Commercial actors in space present great innovative and developmental potential for all mankind ([Aganaba-Jeanty, 2015](https://www.sciencedirect.com/science/article/abs/pii/S0094576515002842" \t "_blank)), but their so-called ‘self-regulatory’ or administrative role should be taken with a healthy scepticism. We already know how that story ends. As Bleddyn Bowen [put](https://spacewatch.global/2020/10/spacewatchgl-column-the-hell-of-humans-in-heaven-debating-the-risks-of-space-technology-and-habitation/) it, “[t]he continuation of the term ‘colonies’ in describing the potential human future in space should raise political and moral alarm bells immediately given the last 500 years of international relations. Will billionaires run their ‘colonies’ the way they run their factory floors, and treat their citizens like they treat their lowest paid employees?” As humanity expands into space, we will need new legal rules and understandings of sovereignty to govern the process ([Leib, 2015](https://www.tandfonline.com/doi/full/10.1080/14777622.2015.1015112" \t "_blank)). **The current legal order is a critical framework that, without supplement, will someday prove incomplete. The legal governance of Mars is an excellent example.** However, **those new laws must fit into that framework; they cannot hang suspended in a vacuum**. We have seen previously the dangers of rashly governing the global commons based on aspiration and resource hunger ([Ranganathan, 2016](https://academic.oup.com/ejil/article/27/3/693/2197248) and [2019](https://academic.oup.com/ejil/article/30/2/573/5536726)). Martian soil cannot become the [manganese nodules](https://oxford.universitypressscholarship.com/view/10.1093/oso/9780198798200.001.0001/oso-9780198798200-chapter-23) of this century. If anything, it is imperative on us to recognise and correct the inequities the current rules have created ([Craven, 2019](https://academic.oup.com/ejil/article/30/2/547/5536739)) before proposing new ones. Space law is an established rulebook likely to undergo some high-octane developments in coming decades. While Elon is welcome to the table, he can’t keep sucking the air from the room. It leaves us space lawyers just shouting into the void.

### Adv (3:20)

#### 2. Justifications for mars colonization are delusions of grandeur which trade off with action to solve earthly extinction threats like climate change. Colonization also independently results in eugenics

Leguichard 21

(Stephanie, Writer, editor, leftist activist. Completing my MA in Anthropology. [https://aninjusticemag.com/sorry-elon-musk-colonizing-mars-could-never-save-humanity-d2858cc486b9 9-13](https://aninjusticemag.com/sorry-elon-musk-colonizing-mars-could-never-save-humanity-d2858cc486b9%209-13))

For someone with absolutely no expertise in astrophysics, Elon Musk’s plans to colonize space are — to put it nicely — ambitious. I’ve heard people describe them as admirable or even inspirational. But others like me (such as astrophysicist Neil deGrasse Tyson) are rightfully skeptical of his delusions of grandeur. In his grandiloquent descriptions of humanity’s SpaceX-enabled future in space, Musk has outlined some concrete visions. By 2026, only five years from now, he envisions that humanity will have created real infrastructure and a permanent habitable society on Mars that is dependent on consistently receiving resources from Earth. By 2050, he predicts that, thanks to his largesse, humanity will have established a permanent self-sustaining city on Mars. In total, he wants to bring at least 1 million people to the red planet. He claims that his efforts could save humanity from our impending disaster on earth. He also wants to replace commercial airline travel with rocket travel, which could supposedly get people to any destination on earth in only 30 minutes, at the same price as an economy plane ticket. And he’s said that within his lifetime, there’s a 70% chance he’ll visit the red planet himself. At first glance, that all sounds cool, I guess. What could be bad about exploring space and “becoming a multi-planetary species”? The false promise of an “insurance policy” for humanity My greatest problem with Musk’s plan is not simply that it’s unrealistic (which it is, within the timeline he’s laid out). After all, Stephen Hawking, who actually has expertise in this area, has said that only several thousand people could feasibly live on Mars within the next century. Even worse, Musk’s space plans are also deeply unjust and dishonest. Even if SpaceX succeeded in rescuing 1 million people from the global destruction wrought by climate change, where would that leave the rest of us 7.8 billion people? We’d be left to burn in the rubble? Conveniently, the vast majority of humanity is clearly excluded from his vision. Michio Kaku, one of Elon Musk’s most ardent defenders, said this in an interview when discussing the “necessity” of Musk’s space plans: Dinosaurs didn’t have a plan B. That’s why they’re no longer here. But we do have a plan B. We need to use space travel, Mars and moon colonization as an insurance policy in case something goes wrong. The “something” he’s referring to includes climate change, nuclear war, or perhaps an asteroid hitting earth. But there’s an elephant in the room — who would this “insurance policy” actually protect? Musk projects that tickets to Mars could cost around $500,000. He’s said that at that cost, people could “sell their house and start their life anew on Mars.” $500,000 is an absurdly low estimate, but even if that were true, the vast majority of people don’t have nearly that amount of money lying around. Musk’s optimism about this only reveals how ridiculously out of touch with reality he is. Based on the exorbitant costs that escaping to Mars would require, it’s clear that only the wealthiest elites, the top 1% of the 1%, would be able to afford it. That doesn’t sound like much of a “plan B” to me. Martian salvation as a eugenics project Throughout history, the question of “who gets to reproduce and propagate their genes” has been a highly contentious and politically charged one. Historically, people in power have gone out of their way to prevent certain types of people from having offspring — most often poor people, people of color, disabled people, mentally ill people, and various other marginalized groups have been targeted. Bringing humanity to Mars to evade disaster on earth would be the final iteration of that. The disadvantaged masses who would be left behind, overwhelmingly people of color from the Global South, would be extinguished from the evolutionary chain. As Neil deGrasse Tyson has said, if the purpose of expanding to Mars is to ensure that humanity evades disaster on earth, then it would be much more prudent to simply solve our problems on earth so that our solution could save everyone. A solution that only saves the most obscenely privileged people on the planet isn’t a solution at all. For instance, as Tyson elaborates, if we want to prevent extinction from an asteroid, it would be much easier to deflect the asteroid than to use Mars as a solution. Colonizing Mars would only save a small fraction of humanity, whereas deflecting the asteroid would save all of humanity. The same applies to climate change. Estimates suggest that Elon Musk’s Mars project could cost well into the tens of trillions of dollars. That same amount of money (or whatever amount he ends up devoting to SpaceX) could go a long way toward combating climate change and helping billions of earthlings who could never even entertain the idea of becoming Martians.

#### 3. Private mars colonization *requires* massive inequality-it’s viewed as a *spatial fix* that allows infinite expansion of colonialism

Penny 20

(ELEANOR PENNY is a writer, poet and essayist based in London. member of the Society of Authors (SoA) and the National Institute for Writers in Education (NAWE). , <https://inthesetimes.com/article/space-privatization-future-technology-silicon-valley-elon-musk-jeff-bezos>, 12-17)

The eye-watering upfront costs of these exploratory, high-risk, high-reward endeavors can be absorbed by Silicon Valley venture capitalists and the personal fortunes of its aristocracy. A concentration of capital stands ready to risk big money to secure a stake in future markets (which will double down on its power in existing ones). The point is to ensure a slice of the territory everyone else will be clamoring for. This form of ​“creative destruction”—an idea developed by economist Joseph Schumpeter, understood in neoliberalism to describe the boom-bust cycle of innovation — is often packaged in the mythology of moonshot genius that drives human progress. But Schumpeter’s theory has a less discussed underbelly: Such creative destruction is usually twinned with market capture. As competitors are tossed onto the scrap heap of history by their own sudden irrelevance, oligarchies and monopolies flourish. The riches of the asteroid belt make earthly mining look positively parochial. The problem is that a sudden, vast supply of (formerly) precious metals would make market prices plummet. Journalist Aaron Bastani, author of Fully Automated Luxury Communism, notes that satellite-delivered digital information has the potential to replace our earthbound Internet networks with ​“space-based global Internet” — the way music streaming has replaced CDs and CDs replaced cassettes and vinyl — or to at least render them much cheaper (through, for example, open-access 3D printing). SpaceX and Blue Origin surely share a goal to make space transport cheaper. The question is, for whom? These ventures train their sights on infinite excess, with dwindling marginal costs as the supply of key materials and digital resources expands. This paradigm is great for those interested in the advancement of human civilization, but not so much for a grinning billionaire’s fixation on the bottom line. At first glance, expanding industry beyond Earth sounds like a pragmatic fix to the earth-shatteringly simple dilemma faced by capitalism: that it must grow to survive, but the planet it grows upon is finite. But to maintain profit margins in conditions of plenty (a demand of industry), legal and political fixes are required. If you exclusively own mining rights to asteroids rich in platinum — and precious little platinum is left on Earth — you can charge whatever you like for platinum. The diamond industry perfected this technique decades ago. (Elon Musk’s family fortune comes partially from a Zambian emerald mine.) Hence, the focus of the new space race is not on the production of goods or their most efficient sourcing, but on ownership of land and transport networks. In this latest phase of capitalism, as national growth slows, productive industries dwindle and wealth concentrates in fewer hands. As economist Thomas Piketty has observed, this phase is accompanied by a pivot toward rent-seeking as a profit mechanism. In other words, the scramble for space is the scramble to own satellites and ​“starways,” gatekeep the riches of the solar system and charge rent on the moon. Against this backdrop, Space Force might seem retrograde, a warped nostalgia for a time when the space race was about petty terrestrial wars rather than Musk’s supposedly enlightened vision to colonize Mars. In reality, the two visions go hand in hand. Military might physically captures and secures territory, enforces the American political and legal apparatus and ensures business can function (even on the moon). The darlings of this new space age paint their vision as daring futurism, a wild-eyed libertarian dream of human elevation. But history repeats and the story is old. Like Bezos and Musk, Cecil Rhodes — mining magnate and premier villain of the British Empire — also succumbed to dreams of wealth in the night sky. ​“Expansion is everything,” Rhodes said. ​“I would annex the planets if I could.” Where technology opens up the yawning unknown of new territory glittering with potential profit, private enterprises hustle for dominance — backed by the military and legal capacities of earthbound nations. Colonialism in space is not some post-humanist utopia, but the age-old dominion of land barons and mining magnates, billionaires sloughing off the wreckage of one planet and setting out for the stars.

#### 4. Private Mars colonization ensures error replication and resources would be better deployed terrestrially

Bharmal 18

(Zahaan works for Google and is a recipient of Nasa’s Exceptional Public Achievement Medal for YouTube Space Lab. [https://www.theguardian.com/science/blog/2018/aug/28/the-case-against-mars-colonisation 8-28](https://www.theguardian.com/science/blog/2018/aug/28/the-case-against-mars-colonisation%208-28))

The most polarising issue in the Mars debate is arguably the tension between those dreaming of a second home and those prioritising the one we have now. Before his death, Stephen Hawking made the bleak prediction that humanity only had 100 years left on Earth. Faced with a growing list of threats – climate change, overpopulation, nuclear war – Hawking believed that we had reached "the point of no return" and had no choice as a species but to become multi-planetary – starting with the colonisation of Mars. Elon Musk has also said on numerous occasions that we need a “backup planet” should something apocalyptic – like an asteroid collision – destroy Earth. However, not everyone agrees. In the Pew survey mentioned earlier, a majority of US adults believed that Nasa’s number one priority should be fixing problems on Earth. The billions – if not trillions – of dollars needed to colonise Mars could, for example, be better spent investing in renewable forms of energy to address climate change or strengthening our planetary defences against asteroid collisions. And of course, if we have not figured out how to deal with problems of our own making here on Earth, there is no guarantee that the same fate would not befall Mars colonists. Furthermore, if something truly horrible were to happen on Earth, it’s not clear Mars would actually be an effective salvation. Giant underground bunkers on Earth, for example, could protect more people, more easily than a colony on Mars. And in the event of apocalyptic scenario, it is possible that the conditions on Earth – however horrific – may still be more hospitable than the Martian wasteland. Let's not forget that Mars has next to no atmosphere, only one third gravity and is exposed to surface radiation approximately 100 times greater than on Earth.

#### 5. Private ventures directly trade off with NASA’s own– private companies get billions in subsidies to waste on Mars

Pizzigati 18

Sam Pizzigati, (Veteran labor journalist and Institute for Policy Studies associate), 3-21-2018, "Billionaires won’t save the world – just look at Elon Musk," https://www.commondreams.org/views/2018/03/21/billionaires-wont-save-world-just-look-elon-musk, // HW AW

Will Mars save humanity? Or will our savior be billionaire Elon Musk? Musk, the CEO of SpaceX and Tesla, humbly believes we don’t have to choose. Mars will save us, he promises, and Musk himself will engineer this Mars miracle. In 2019, Musk claims, SpaceX will [start making](https://www.cbsnews.com/news/elon-musk-revises-spacex-mars-plans-hopes-for-flights-2022/) short trips to Mars. By the early 2020s, his company will begin colonizing the Red Planet with a human population. Why this feverish haste to set foot on interplanetary terra firma? Musk [sees](https://www.cnet.com/news/elon-musk-wants-to-preserve-humanity-in-space/?ftag=CAD090e536&bhid=21042762719686224048097372147668) a new “dark age” descending on our precious Earth. Another world war — or some environmental collapse — appears likely to threaten us with extinction, he fears. Mars strikes Musk as our ideal refuge, the place where humankind will heroically regroup and eventually “bring human civilization back” to our mother planet. And we can even have some fun in the process. The Mars colony that Musk envisions will have everything from iron foundries to “pizza joints and nightclubs.” “Mars,” he [quips](https://www.cnet.com/news/elon-musk-wants-to-preserve-humanity-in-space/?ftag=CAD090e536&bhid=21042762719686224048097372147668), “should really have great bars.” Reporters have become accustomed to this sort of visionary whimsy from Musk. The billionaire, In These Times says, has [crafted](http://inthesetimes.com/working/entry/20899/elon-musk-spacex-tesla-falcon-heavy-launch) his image as “a quirky and slightly off-kilter playboy genius inventor capable of conquering everything from outer space to the climate crisis with the sheer force of his imagination.” This carefully cultivated image has proven extraordinarily lucrative. Investors now value Tesla, his 15-year-old car company, at around $60 billion — not bad, [note](http://wallstreetonparade.com/2018/03/this-is-not-normal-markets-elon-musk-and-donald-trump/) Wall Street watchdogs Pam and Russ Martens, for a firm that “lost almost $2 billion last year and has never delivered an annual profit to shareholders.” But Musk remains [supremely confident](https://www.cbsnews.com/news/elon-musk-mars-explorers-sxsw-south-by-southwest-austin-texas-today-2018-03-13/) that his enterprise on Mars will take root and prosper. He’s betting a good chunk of his fortune on that. Or rather, **he’s betting a good chunk of taxpayers’ fortune**. Musk owes his billions, as commentator Kate Aronoff [points out](https://www.salon.com/2018/02/12/the-case-for-nationalizing-elon-musk/), to the **billions in direct taxpayer subsidies his companies have received over the years — and the billions more in taxpayer-funded research into rocket technology and other high-tech fields of knowledge**. **So Musk is essentially investing our billions in his own pet projects, everything from the Mars gambit to establishing a** [**mass-market niche**](https://www.theverge.com/tldr/2018/2/1/16954950/elon-musk-flamethrowers-sold-out) **for high-tech flamethrowers.** None of this is going to rescue humanity anytime soon. Indeed, if Musk really wanted to ensure humankind a sustainable future, he wouldn’t be plotting escapes to Mars or marketing flamethrowers to the masses. He’d be challenging the global economic status quo that’s left him phenomenally rich and our world phenomenally unequal. This inequality **may well pose the greatest threat to our well-being as a species.** Stark economic divides invite armed confrontations. Inequality and conflict, Norwegian scholars observed last year in a [major report](https://www.prio.org/Publications/Publication/?x=10538) for the United Nations and the World Bank, remain “inextricably linked.” They found that “**inequality influences the outbreak and dynamics of violent conflict,”** going all the way back to the ancient Greeks. In more recent years, researchers have made great strides in understanding the actual pathways in unequal societies that turn conflict violent. But huge gaps in the research are still frustrating our understanding. What we do know: Hawking high-tech flamethrowers is never going to save humanity. Neither will bar-hopping on Mars.

#### 6. You should heavily discount optimism about space colonization- there’s a profit incentive to make colonization appear feasible despite technological deficiencies. This functions as an epistemology indict to every neg card that supports colonization

Prell 18

(James Prell is a recent graduate of the University of Pennsylvania. He reads and writes about science, technology, and society. [https://www.sciencehistory.org/distillations/the-folly-of-the-martian-back-up-plan 8-17](https://www.sciencehistory.org/distillations/the-folly-of-the-martian-back-up-plan%208-17))

In an interview with the American astrophysicist Neil deGrasse Tyson in 2010, Stephen Colbert called astronauts “the supermodels of science.” The bit was satirical, but Colbert had a point: for many, spaceflight is sexy. The serious question is: do we actually need to send people into space—supermodels or not? In recent years, buzz has surrounded the partnership between NASA and SpaceX, a company whose founder, Elon Musk, has famously stated that he will launch the first manned mission to Mars in 2024. On February 6, SpaceX ran its first test launch of the Falcon Heavy, a rocket system with three reusable boosters that Musk says is the precursor to the BFR, or Big Falcon Rocket, that he intends to build in order to carry the first colonists to Mars. For Musk, an independent colony on Mars would function as a way to "back up the biosphere." If anything were to happen on Earth that could cause an extinction event, such as nuclear war or a meteor strike, Musk sees Mars as a way to ensure that humanity survives. This existential reasoning for traveling to the red planet does come with a problem. We have barely developed the technology to consistently launch these rockets. Musk is confident in the tech behind his reusable boosters, but experts like Dan Dumbacher—a former NASA employee—remain skeptical. “We tried to make [the space shuttle] reusable for 55 flights,” he told SpaceNews in 2014. “Look how long and how much money it took for us to do that, and we still weren’t completely successful for all the parts. I want to be realistic: We are not as smart as we think we are and we don’t understand the environment as well as we think we do.” The cost of each launch during the space shuttle program, with refurbishment costs taken into account, ran between $450 million and $1.5 billion. SpaceX’s account of their costs have been well below those figures, averaging between $61.2 million and $42.8 million per launch. However, the private company does not have 30 years’ worth of data on refurbishment costs at this point, so it is too early to celebrate its success. And that’s just getting off the ground. It would cost between $121 and $48 billion per person per year to sustain a Martian colony according to data from Popular Science Magazine in 2013, but the real cost is impossible to know without actually going. Why should we spend time and resources trying to survive on Mars when we could be working to understand how to survive on earth in the event of the kind of catastrophe that set Musk’s eye on Mars in the first place? If some group were to attempt the journey today, they would need access to technologies that would make them as self-sufficient as possible. After all, Earth would be nearly 33.9 million miles away during its closest pass to the red planet. Water recovery systems that reclaim vapor, wastewater, and urine — like the ones currently installed on the International Space Station — would have to be used on the journey, and sent ahead to Mars along with habitats ready for assembly upon the astronauts’ arrival. According to NASA such a system would have to have an efficiency much higher than the current 74% in order to be viable for deep space missions. The same goes for oxygen regeneration and carbon dioxide removal, which, as of today stands at around 40% efficiency and “must increase significantly” before anyone attempts the journey to Mars. As for food, astronauts would have to rely on a one-time supply of food sent ahead, or attempt to grow it themselves along the way. Since self-sustainability is key, a mission hoping to survive on the dead surface of Mars would likely rely on greenhouses, such as the inflatable ones in development under Dr. Ray Wheeler at NASA. These greenhouses use hydroponic farming techniques to grow crops and “sustain astronauts on a vegetable diet,” with the added benefit of helping carbon dioxide, oxygen, and wastewater management. While all of these systems might be ready for use by a small crew within a few years, a colony of a size large enough to safeguard humanity from extinction would push them to the breaking point. It would take, optimistically, decades before Mars was truly self-sufficient, and that time and money could be spent working to prevent the kind of disasters that threaten our existence on Earth, such as natural disasters related to climate change. On its best day, Mars still barely has an atmosphere. Its core is inactive, which means that it lacks any kind of magnetic field to block out the most intense solar radiation. It is a dead planet that would take efforts only dreamed about in science fiction to colonize. Even Earth after total nuclear war would be easier to live on. There is scientific value in the exploration of other planets, but discoveries can be achieved without the steep added cost of having to keep an astronaut alive during the trip. Compared to the projected cost of a Martian base, NASA’s Curiosity rover cost a fraction of that, coming in at $2.5 billion. Curiosity has far exceeded its life expectancy of two years and continues to operate today, with the added benefit of not needing to eat, breath, or worry about dying from radiation exposure.

#### 7. Mars colonization has infected the masses with capitalist realism- we must reclaim our fate from billionaires to challenge oppression

Leguichard 21

(Stephanie Writer, editor, leftist activist. Completing my MA in Anthropology. [https://aninjusticemag.com/sorry-elon-musk-colonizing-mars-could-never-save-humanity-d2858cc486b9 9-13](https://aninjusticemag.com/sorry-elon-musk-colonizing-mars-could-never-save-humanity-d2858cc486b9%209-13))

How Musk’s strategically blind optimism reinforces capitalist realism Musk has admitted that his space endeavors might not be profitable. So when asked about his motive, he’s said that his goal is to make people excited about the future in a world where we’re constantly barraged with depressing news and pessimism about the future. That might sound philanthropic or noble to some people. But there’s a convenient agenda lurking beneath this rosy rhetoric. This kind of optimism about providing an easy solution to save humanity reinforces a sinister form of capitalist realism. In case you’re not familiar with the concept, capitalist realism is “the widespread sense that not only is capitalism the only viable political and economic system, but also that it is now impossible even to imagine a coherent alternative to it.” Musk’s agenda is to present a supposed alternative to addressing climate change. He wants to drum up optimism around the prospect of saving a portion of humanity to diminish the urgency to salvage our current planet. Billionaires like Musk know that fully combatting climate change would require dismantling capitalism. And that would require him to relinquish his godlike power in this system that he’s profiting so immensely from. It’s in billionaires’ best interest to dupe us into thinking there’s a “plan B” that can allow us to escape the culmination of late capitalism’s devastation of the planet. The more optimistic we become about Mars as a “solution,” the more we resign ourselves to the fate of letting capitalism continue unabated. In other words, Musk is perpetuating capitalist realism by promoting the idea that a billionaire, and the capitalist system as a whole, can save us from environmental destruction, and no radical change is necessary. The honest way to give people optimism about the future should involve developing plans to tackle climate change — not turning a blind eye to the problem. Merely distracting us with shiny new-fangled toys is dangerously irresponsible. It’s convenient that billionaires present themselves as the optimists while portraying anti-capitalist environmentalists as pessimistic naysayers. But it’s actually the opposite. They’re the true doomsday prophets, prematurely deciding that we’re not capable of divesting from our current capitalist system to save our planet. They want us to think it’s a lost cause. If we don’t challenge their fatalistic worldview, it could become a self-fulfilling prophecy. So let’s not let them win.

#### 8. The pursuit of mars colonization is actively harmful even though it won’t happen- it’s what legitimates and sanitizes the activity of the ultra rich- solvency is reverse causal

Kern 21

(Sim, <https://www.independent.co.uk/voices/bezos-musk-branson-space-billionaires-b1886741.html>, 7-19)

Last weekend, Richard Branson described his bounce up to low-earth orbit as making space “more accessible to all.” It’s laughably ironic for a billionaire to co-opt the language of inclusivity to describe the privatization of space flight. However, mainstream media shared the speech far and wide, largely uncritically, with few journalists pointing out that this carnival ride for the uber-rich was funded with over $200 million dollars in taxpayer subsidies. None that I saw credited Chanda Prescod-Weinstein, the Black feminist astrophysicist whose line Branson reflected, and whose idea of making space accessible to all starts with social justice on earth. With this speech, Branson added to the chorus of billionaires using science fiction fantasies to sell us on their vanity space programs. Jeff Bezos will likely treat us to more high-minded speechifying in advance of his launch on Tuesday. He has described Blue Origin’s mission as necessary to avoid putting a limit on energy usage per capita on Earth. Basically, in order to avoid learning to live sustainably here, we must go up to space so we can keep exploiting the hell out of whatever we find up there. As SpaceX’s Elon Musk has said, “We don’t want to be one of those single planet species, we want to be a multi-planet species”. Never mind that we’ve found zero evidence of any kind of life on other planets, let alone intelligent life, let alone intelligent life spread across multiple planets; Musk’s rhetoric echoes a commonly-held belief that space colonization is an inevitability, that it’s our destiny. We should be wary when rich people say that colonization is our destiny. That rhetoric sounds awfully similar to Manifest Destiny, which provided greedy men a moral pretense to commit a lot of atrocities. I recently wrote a viral Twitter-thread-turned-essay about the enormous challenges of sustaining life in space, and why we’re not going to see lunar colonies anytime soon. But just because these billionaires won’t succeed in establishing exoplanetary colonies in their lifetimes doesn’t mean their pursuit of them isn’t harmful. Bezos, Branson, and Musk have sold the public on their space programs, and as a result, we’re giving them a lot of our wealth – billions of dollars of taxpayer money and billions in personal investments. What’s more, the global economic system is rigged so that a guy like Bezos can become a hundred-billionaire while profiting off the labor of over a million employees, some working for poverty wages, who piss in bottles to meet quotas and sometimes die at work. Meanwhile, the activities of the corporations that create these billionaires are ravaging the only habitable planet we’ve got. But because our neo-feudal lords have sold us on a science-fiction fantasy, many look up to them as heroes rather than decrying their obscene and ill-gotten wealth. Look, I love science fiction. I’m a sci-fi writer and a lifelong Trekkie. But I’m starting to realize that a public which consumes so much science fiction and so little science fact is dangerous. Just because you watched Matt Damon live on Mars for a year in a movie with convincing graphics doesn’t mean that Elon Musk is on the verge of building a colony there. But when he says he’s going to Mars in six years, there are legions of Musk stans on Twitter who believe him – and his stock soars. One reason we find the fantasy of outer space colonization so irresistible is the prospect of starting afresh. Our global society is enormously complicated, with baked-in bigotries and illogical ways of doing things that seem impossible to untangle here on earth. But on another planet, so we assume, we could start over and get it right this time. Realistically, though, there’s no leaving our messiness behind, no matter how many light-years away we travel. I can’t think of a better illustration for this than the fact that the moon is already a toilet. When people think of what astronauts left behind on the moon, they might picture Buzz Aldrin planting an American flag. But I picture all the literal shit we left up there. NASA, unlike any respectable hiker, didn’t value “packing out waste”. The pooping protocol for Apollo astronauts involved wearing adhesive bags stuck to their asses, which notoriously tore out pubic hairs when removed. They sealed the bag – hoping nothing escaped to float around the lunar module – and crushed an antibacterial capsule inside, mushing it around with their poop to prevent a future biohazard. Then they chucked the bag out the airlock. Over the course of the Apollo missions, we planted five flags on the moon and ninety-six bags of human excrement. We also left a plaque on the Lunar Lander reading, “We came in peace for all mankind” – never mind that at the time, the US was carpet-bombing Vietnam and hitting the kids who lived there with napalm. Anywhere we travel, we’ll be bringing all our shit – literal and figurative – with us. And as any Apollo astronaut can tell you, shit is much easier to deal with on Earth than in space. If you care deeply, as I do, about the long-term goals of space science, it’s imperative to put a stop to the world-eating overconsumption that creates billionaires, rather than indulging their pet projects. For now, the best thing we could do to ensure humanity’s long-term survival in space is to figure out living sustainably here on earth. If you’re a sci-fi lover like me, think of it this way: we are already living on a magnificent spaceship uniquely suited to our needs. It is enormous, big enough to bring all our friends and family along. It has excellent gravity and radiation shielding in the form of a breathable atmosphere. It comes with a nearly-unlimited renewable energy source – the Sun – which should last us another billion years before it gets too hot and burns us up.

### Framing (2:15)

#### 9. Capitalist realism makes it easier to imagine *the end of the world* than the *end of capitalism*. We don’t need a revolutionary break, we need a progressive series of steps that redefine political economy and space is a crucial starting point. The end of capitalism isn’t just *possible*, it’s *necessary*

Robinson and O’Keefe 20

(ABOUT THE AUTHOR Kim Stanley Robinson is the author of more than twenty books, including New York 2140, Red Moon, and the Mars trilogy. ABOUT THE INTERVIEWER Derrick O’Keefe is a cofounder and editor of Ricochet Media and is the author of Michael Ignatieff: The Lesser Evil? and A Woman Among Warlords, coauthored with Afghanistan’s Malalai Joya. Derrick is a longtime political organizer in Vancouver, BC. <https://www.jacobinmag.com/2020/10/kim-stanley-robinson-ministry-future-science-fiction>, 10-22)

DOK I wanted to ask you about the now-famous quote attributed to Jameson, which is actually a bit of a paraphrase: “It is easier to imagine the end of the world than to imagine the end of capitalism.” It strikes me this book is coming out in a year when it’s become pretty easy to imagine the end of things, and that the real challenge is to imagine the beginnings of some kind of socialist system. As much as The Ministry is about the future, it suggests that those beginnings we need are already here with us now and that it’s really a matter of scaling up some of those alternatives. KSR I’m a novelist, I’m a literature major. I’m not thinking up these ideas, I’m listening to the world and grasping — sometimes at straws, sometimes just grasping at new ideas and seeing what everybody is seeing. If we could institute some of these good ideas, we could quickly shift from a capitalism to a post-capitalism that is more sustainable and more socialist, because so many of the obvious solutions are contained in the socialist program. And if we treated the biosphere as part of our extended body that needs to be attended to and taken care of, then things could get better fast, and there are already precursors that demonstrate this possibility. I don’t think it’s possible to postulate a breakdown, or a revolution, to an entirely different system that would work without mass disruption and perhaps blowback failures, so it’s better to try to imagine a stepwise progression from what we’ve got now to a better system. And by the time we’re done — I mean, “done” is the wrong word — but by the end of the century, we might have a radically different system than the one we’ve got now. And this is kind of necessary if we’re going to survive without disaster. So, since it’s necessary, it might happen. And I’m always looking for the plausible models that already exist and imagining that they get ramped up. DOK The cooperative economy of Mondragon, in the Basque region, comes up as one such model in a number of your books. And in The Ministry, there is the example of Kerala, because India is so central to the book’s action as a leader of the transition to dramatic climate action. KSR I’m very interested in both these examples. I’ve actually never been to either region, but I’ve got contacts in both. In Mondragon, they are aware of me as an American science fiction writer who likes them, because my Mars trilogy books are translated into Spanish and do quite well in Spain. With Kerala, I’ve been studying it for twenty, twenty-five years. Like, why is it different and how is it different? Could it be a tail-wagging-dog situation for the rest of India? And so on. I did put places that I’ve been in the novel, because I needed some anchoring points — principally Zurich [where the titular ministry is headquartered]. My wife and I lived in Zurich for years, and I finally managed to put that into fiction, which was a great pleasure. But as for the rest of the world, and for these kinds of leftist precursors, or already existing leftist states that are at a regional or town level, I’ve often thought to myself, “Is there any reason that these can’t be taken as models?” Is there any real reason — since obviously there are ideological reasons; if you’re a defender of capitalism per se, then you would say these are outliers of sorts or too small to be relevant — but if you’re a leftist, you look at them and see the public support for what they’re doing, and you ask, “Why couldn’t that work at a larger scale?” Especially if you’re trying to imagine futures that are working better, which is what a utopian science fiction writer does, then you’re kind of desperate for real world-models. DOK When I originally heard the synopsis for this book, it struck me immediately as something like an ecosocialist Looking Backward 2000–1887. The main character in that work by Edward Bellamy had fallen asleep for over a century and then woke up in a sort of post-capitalist utopia in the year 2000. In contrast, The Ministry is more about the journey to 2050 or so, a world that is very different from today both economically and politically. How do you situate this work, and your work more broadly, within the utopian tradition? KSR Well, Bellamy’s is a good book to think about, because it had an impact in the real world. There were Bellamy clubs, and the whole progressive movement was energized by Looking Backward. I’ve steeped myself in the utopian tradition. It’s not a big body of literature, it’s easy to read the best hits of the utopian tradition. You could make a list, I mean roughly twenty or twenty-five books would be the highlights of the entire four hundred years, which is a little shocking. And maybe there’s more out there that hasn’t stayed in the canon. But if you talk about the utopian canon, it’s quite small — it’s interesting, it has its habits, its problems, its gaps. Famously, from Thomas More (Utopia) on, there’s been a gap in the history — the utopia is separated by space or time, by a disjunction. They call it the Great Trench. In Utopia, they dug a great trench across the peninsula so that their peninsula became an island. And the Great Trench is endemic in utopian literature. There’s almost always a break that allows the utopian society to be implemented and to run successfully. I’ve never liked that because one connotation of the word “utopian” is unreality, in the sense that it’s “never going to happen.” So we have to fill in this trench. When Jameson said it’s easier to imagine the end of the world than the end of capitalism, I think what he was talking about is that missing bridge from here to there. It’s hard to imagine a positive history, but it’s not impossible. And now, yes, it’s easy to imagine the end of the world because we are at the start of a mass extinction event. But he’s talking about hegemony, and a kind of Marxist reading of history, and the kind of Gramscian notion that everybody’s in the mindset that capitalism is reality itself and that there can never be any other way — so it’s hard to imagine the end of capitalism. But I would just flip it and say, it’s hard to imagine how we get to a better system. Imagining the better system isn’t that hard; you just make up some rules about how things should work. You could even say socialism is that kind of utopian imaginary. Let’s just do it this way, a kind of society of mutual aid. And I would agree with anyone who says, “Well, that’s a good system.” The interesting thing, and also the new stories to tell if you’re a science fiction novelist, if you’re any kind of novelist — almost every story’s been told a few times — but the story of getting to a new and better social system, that’s almost an empty niche in our mental ecology. So I’ve been throwing myself into that attempt. It’s hard, but it’s interesting. Homo Economicus Is a Fraud DOK Amidst and between all the action of The Ministry, there are some polemics carried out, is that fair to say? One recurrent polemic is against mainstream economics, a theme running throughout the book that there’s a need for new metrics and new indices both to quantify the biosphere and to express what we truly value rather than just GDP and the stock market. KSR There is a polemic for sure. First, I would want to make a distinction between economics and political economy, because by and large, economics as it’s practiced now is the study of capitalism. It takes the axioms of capitalism as givens and then tries to work from those to various ameliorations and tweaks to the system that would make for a better capitalism, but they don’t question the fundamental axioms: everybody’s in it for themselves, everybody pursues their own self-interest, which will produce the best possible outcomes for everybody. These axioms are highly questionable, and they come out of the eighteenth century or are even older, and they don’t match with modern social science or history itself in terms of how we behave, and they don’t value the natural biosphere properly, and they tend to encourage short-term extractive gain and short-term interests. These are philosophical positions that are expressed as though they are fixed or are nature itself, when in reality they are made by culture. Political economy is a kind of nineteenth-century thing, a more open-ended idea where we could have different systems. And that accounts for a lot of the struggles of the twentieth century. But capitalism likes to pretend that it’s nature itself, and that’s what economics is today, largely. Take the term “efficiency.” In capitalist economics, that’s just regarded as almost a synonym for “good,” but it completely depends on what the efficiency is being aimed at. You know, machine guns are efficient, gas chambers are efficient. So, “efficiency” as such does not mean “good.” It is a measure of the least amount of effort put in for the most amount gotten out. One of the things you’re seeing during the pandemic is that the global system of creating masks is efficient, but it is also fragile, brittle, and unreliable because redundancy, robustness, and resilience are all relatively inefficient, if the only rubric of efficiency is profit. Capitalist economics misunderstands and misjudges the world badly, and that’s why we’re in the mess we’re in — caught between biosphere degradation and radical social inequality. These are both natural results of capitalism as such, a result of the economic calculations we make under capitalist axioms. Distinctions have to be made here. Quantification is really part of science. Social science has some tools for understanding and generalizing from the particulars of individuals to what the group might want. Twenty-five years ago, I might have said, “Economics, we have to throw it out.” That doesn’t hold for me anymore. Economics has a set of tools. And social science tools, working with the right axioms, could make for a socialist economics. There could be a post-capitalist economic system. But what you’re then talking about is a different political economy. That’s one of the things The Ministry is about. Can you morph, by stages, from the political economy that we’re in now, which is neoliberal capitalism, to what you might call anti-austerity, to a return to Keynesianism, and then beyond that to social democracy, and then beyond that to democratic socialism, and then beyond that to a post-capitalist system that might be a completely new invention that we don’t have a name for? Right-wing thinking is supremely hypocritical and convoluted and self-contradictory, and that needs to be pushed on and pointed out at every chance. This is why I hold myself to calling it “post-capitalism,” so as not to try and define it by any of the nineteenth-century political economies. I think many of the solutions can be found in socialism, but I don’t call myself a socialist. I would want to keep it a little more open to the idea that we have to morph capitalism as such, and that we might shove it to the margins, where we might have a market for the non-necessities. I think the market itself has to be reexamined, and this is so fundamental to the way that modern society works that it’s frightening, and, for me, it’s better to think in a stepwise fashion and to imagine society from where we are now transforming to an undefined better political economy. Planetary Heat Death or the End of Capitalism — We Can Choose DOK One of the axioms of that better political economy is expressed in The Ministry as “Public ownership of the necessities, and real political representation” — two things together that we are far from having, by greater or lesser degrees, really almost everywhere today. A key part of getting from here to there, to a new political economy, involves the question of finance. In New York 2140, one of your characters is a Wall Street trader speculating on intertidal markets, and much of the action concerns finance and the banks. In The Ministry, even more radical measures are contemplated for putting finance at the service of a livable, non-submerged future. Where did you get the inspiration for Carbon Quantitative Easing and the rest of the transformation of finance imagined in this book? KSR Carbon Quantitative Easing is not my idea. I really am just a listening facility here, trying to amplify ideas. That one is out there. Recently, even Lawrence Summers — who was the treasury secretary for Bill Clinton and a neoliberal of the first order — and his think tank have been putting out stuff about some kind of CQE. So it’s been spreading quickly as an idea, and I’m glad. But in the years since I wrote New York 2140, I learned more about the central banks and realized that nationalizing the banks, which happens in 2140, wouldn’t be going far enough. It would be great if all banks were owned by the people, and if banks were not private profit-making enterprises, that would be great — but it would only be one step along the way; it would not be enough. Because, at this point, central banks are only concerned with stabilizing money and maybe helping employment levels, and they will not do anything else unless they are under enormous pressure. They need to be changed, and that’s a lot of what this novel’s about. Changing the way we regard money, that would be a step toward post-capitalism right there. If money was created from scratch but not given to the banks to loan to whatever they wanted but given to decarbonization projects first, then flowing out into the general economy — the first spending money by governments, which make money in the first place, would be targeted toward decarbonization efforts. This strikes me as a good idea, a necessary idea. Because saving the biosphere doesn’t make a profit in the capitalist order, we will never do it, and we are therefore doomed. So a very fundamental reform of how we regard money itself is absolutely necessary. I’m saying that a post-capitalist political economy that regards money as created for the public good and is spent on that first — and then trickles into the general economy — is a fundamental shift, and without it, we’re in terrible trouble. DOK A lot of the action takes place in Switzerland, as you mentioned, because many of the main characters are members of the Ministry of the Future headquartered in Zurich. Do you worry that your story could evoke right-wing tropes like the globalist, world government bogeyman that nationalists talk about to avoid action on climate change? KSR Well, maybe so, but I would say the Left has to fight fire with fire. Right-wing ideas are also conceptions of globalization, in terribly poor disguises as being nationalist. But the nationalist system is embedded in capitalism; it’s just completely international and global. These right-wingers, if they could make an extra dime an hour by selling out national citizens by sending their industries to China or India — they’d do it in a second, and they already have. So they need to be called out for being completely inconsistent and hypocritical. And the Left needs to be much more aggressive on that, and say the problem is not globalization per se; the problem is bad globalization, which is capitalism, as opposed to good globalization, which is mutual aid and cooperation among the nation states by way of international treaties and things like the UN. The Paris Agreement is crucial. It’s a major event in world history. It could turn into the League of Nations, in which case we’re screwed. Or it could turn into something new in history, a way to decarbonize without playing the zero-sum game of nation against nation. So all this needs to be fought at the level of the discursive battle, and no concessions can be made on that point. I mean, right-wing thinking is supremely hypocritical and convoluted and self-contradictory, and that needs to be pushed on and pointed out at every chance — these supposed nationalists are also going to sell you out. This discursive battle, it’s very important. DOK You talked about the Great Trench, of how we get from here to there, and it strikes me that this book is very grounded. There’s no reference to a lunar colony, let alone to any Elon Musk Inc. version of Mars, and there’s no mention of off-planet gated communities like in the film Elysium. Does this absence imply that saving the earth, or transitioning to a livable system, requires stopping the capitalist colonization of space? I kept waiting for an Elon Musk character. KSR Well, since there are 106 chapters — I guess that I could have made it 107, and I could have talked about that. But maybe the absence does speak louder than words. All of those things are fantasies, and billionaire fantasy trips are not going anywhere. In Red Moon and Aurora, I’ve made my statement about what’s possible and what isn’t. Because in the capitalist world, you have to make a profit, and even the billionaires don’t have enough money to properly fund these ventures on their own. So they talk about asteroid mining — that’s bullshit. They talk about Helium-3 mining on the moon — that’s bullshit. There is no profit in space. It’s just a fantasy of our culture right now, because everybody’s been convinced by science fiction writers [laughs], and they’re not paying attention to the numbers game, I guess. I believe in space science. I’m totally in love with NASA, and with public space science, as part of government. There’s this saying of NASA’s, “space science is Earth science,” and I totally believe that.

#### 10. Capitalism undergirds all modern conflicts and regions of instability

Fernandes PhD 18 (Marcelo Fernandes, Ph.D. - Université Libre de Bruxelles, Research Areas: Econometrics Empirical Finance, Jan-April 2018, "Imperialism and the Question of System Stability," ScieElo, http://www.scielo.br/scielo.php?script=sci\_arttext&pid=S0102-85292018000100033)///PSC

Numerous Marxist authors – including Harvey (2004), Callinicos (2009) and Gowan (2003) – reject the notion that capitalism could reach a level of stability capable of putting an end to inter-imperialist rivalries. But authors such as Sakellaropoulos (2009), Sakellaropoulos and Sotiris (2015), and Marshall (2014) have a more consistent understanding of this phenomenon, since they develop an explanation based on Lenin’s theory of imperialism. Therefore, they manage to establish some opposition to the idea of system stability analysed in the previous sections. Lenin ([1916] 1979) characterised imperialism as a specific stage of the capitalist mode of production, resulting from a substantial change in its organisational structure, the stage of monopoly capitalism, and not merely a ‘preferred’ policy of finance capital for territorial expansion and economic-political control. Having started only in the last quarter of the 19th century, imperialism was the result of the inherent tendencies of the process of capital accumulation – in which concentration and centralisation prevail – and of the contradictions arising from the class struggle in capitalism, as analysed by Marx. At this stage, in which monopolies prevailed, crises were not suppressed, or competition among different capital formations eliminated. Far from it, monopolies amplified the anarchy and contradictions of the economic world, bringing competition to a level in which conflicts would escalate. The statement that cartels can abolish crises is a fable spread by bourgeois economists who at all costs desire to place capitalism in a favourable light. On the contrary, monopoly which is created in certain branches of industry increases and intensifies the anarchy inherent in the system of capitalist production as a whole (Lenin [1916] 1979: 701). Lenin also identified finance capital as the central force of imperialism. In the financial sphere, a qualitative change had taken place: unlike the earlier stage in which industrial capitalism prevailed, the economic impulse of imperialism now lay in haute finance. Thus, the particularity of imperialism lay in the intrinsic need to export capital, rather than commodities. It would be precisely through the export of capital that the international character of capitalism with all its economic and social contradictions would assert itself in an aggressive and irreversible way. This would not be through the formal incorporation of territories, as Lenin ([1916] 1979: 735) highlighted when he wrote about the informal British domination of Brazil, Argentina and Uruguay. Even so, the state plays an essential role in the functioning of capitalism. In the absence of global government, capital cannot reproduce itself without nation-states. In order to ensure the interests of the bourgeoisie, the state develops strategies to manage the labour force, intervenes to maintain the profit of national capital and promote its expansion in the international economy (Sakellaropoulos 2009: 63). However, capital exports also lead to competition among states, since they also play the role of mediating among the interests of different ruling classes. Monopolies can join forces in several parts of the world, yet need to remain linked to their home states where they receive legal protection, even outside legal systems, when this is convenient (Harman 2003). Therefore, international conflicts (economic, political and/or military) are intrinsic to the system, although moments of cooperation may prevail (Lenin [1916] 1979). Capital expansion does not necessarily require war, but this cannot be ruled out. For that reason, activities linked to arms acquire a privileged position in national economies. That causes a permanent warmongering atmosphere, since it is functional for monopolies linked to the war industry to have external enemies, whether real or illusory, to justify military purchases. Hence, the term ‘globalisation’, which describes a capitalist world without borders, available and subservient to the supposedly stateless capital of a unified bourgeoisie, hides or denies crucial aspects of the functioning of the international system15 (Halliday 2002; Petras and Veltmeyer 2000; Ruccio 2003). In reality, the concepts of imperialism and globalisation are not compatible. Although several Marxist authors started to use them as a way of explaining contemporary capitalism, both concepts cannot be adopted at the same time, since the idea of globalisation suppresses a series of questions related to the historical development of the relations of exploitation within the capitalist system, and the role of imperialism as a theoretical and historical reference (Sakellaropoulos 2009). The view of various Marxist authors that the international system is characterised by stability seems to find support in certain passages of the Manifesto of the Communist Party, by Marx and Engels (2010). In this understanding, conflicts are caused almost exclusively by the division between the bourgeoisie and proletarians at the international level. Since international capital has attained unprecedented power, there is little room for protest movements that could undermine the system. This view underestimates the importance of the state and other forms of struggle, such as the struggle of nations oppressed by imperialism. However, even in the Manifesto, the nation-state problem is already raised when the authors call for the national liberation of Poland (Marx and Engels 2010: 68). Another relevant example is the struggle for women’s liberation in countries like the United Arab Emirates and Saudi Arabia. These are countries where the oppression of women is a structural problem – although not necessarily connected to multinational corporations – and any deeper gender-related change favouring women can cause great instability, since the region plays an important role in the geopolitical interests of imperialist countries. The notion that multinational companies have an extraordinary capacity for co-ordination that facilitates international exploitation is also more or less explicit in the writings of the authors referred to in the previous section. However, this is a questionable theoretical assumption in the context of Marxism. The tendency towards the centralisation and concentration of capital inherent in the movement of capital does not eliminate competition, but rather brings it to another level, as pointed out by Lenin, following in the footsteps of Marx. This is because it is competition that forces the capitalist to accumulate uncontrollably. Capital produces without considering its limits, because it is an intrinsic expansionist force; hence the crises that occur from time to time when such limits are exceeded. For the capitalist, there is no other way but to continue seeking a continuous expansion. In the logic of capital, there is no room for sentimentality; ‘he who does not rise, descends.’ Therefore, there can be no unified bourgeoisie exploiting markets around the world in an organised way, capable of suppressing economic crises and their economic-social consequences. In fact, the upsurge of capital internationalisation after the Cold War and the image of companies producing simultaneously in several countries – although this is nothing new – create the perception that these companies are no longer related to their states, as Robinson (2007) mistakenly suggests.16 But we need to distinguish between appearance and reality. When General Motors and Chrysler filed for bankruptcy in 2009, they were bailed out by the US government in their country of origin, at a cost of US$80 billion to the American Treasury until 2013 (Beech 2014). And in 2014, the French bank Paribas was fined a staggering US$8.9 billion by a New York court of justice because it had contravened a Federal law, the International Emergency Economic Powers Act of 1977, by facilitating financial transactions with Cuba, Iran and Sudan, countries that were under US embargo (Lauer 2014). The French government intervened directly, in the form of its president, François Hollande. The Paribas case also runs counter to Panitch and Gindin’s idea that the USA serves the interests of a world capitalist class first and foremost. Therefore, in contrast to ‘globalisation’, the notion of an ‘imperialist chain’ formulated by Lenin is still an accurate description of the hierarchical, uneven, and complex relations arising from the reproduction of capital in the international system.17 It brings together the existing capitalist powers, each of them at a different level of development. According to Milios and Sotiropoulos (2009: 19), the notion of ‘imperialist chain’ leads to two questions. The first is about the law of uneven development. According to Lenin, capitalism could never be a stable system because uneven development causes changes in the correlation of forces of the more advanced nations, tending to erode the centre’s power in relation to new poles of power with greater economic dynamism. Consequently, the contradictions among the powers making up the imperialist chain would escalate (Lenin [1916] 1979: 760). The law of uneven development is central to explaining relations among the countries in the imperialist chain, providing an economic basis for military conflicts. The second question is about the weakest link in the imperialist chain. Uneven development creates the possibility of revolutions in the relatively weaker links of the chain, and not in those states in which the productive forces are more advanced, as Marx initially predicted. But this is a relative position: each country in the imperialist chain is weaker or stronger than the other links in the chain (Poulantzas 1979: 23). Indeed, the international scenario that has emerged at the beginning of the 21st century does not seem to confirm the idea that the capitalist system tends towards stability. On the economic front, crises have become more frequent in the ‘globalisation’ era. They began with the Mexican crisis (1994-5), which had serious repercussions, since Mexico used to be regarded as a model to be followed due to neoliberal reforms implemented since the late 1980s. Later on, the crises in East Asia (1997-8), Russia (1998) and Brazil (1998-1999) exposed the fragility of the international financial architecture that emerged in the 1970s. The turn of the century was the stage for new economic turmoil, as in Turkey and Argentina in 2001. Afterwards, the international economy went through a period of relative calm that lasted for about five years, but this was soon followed by the US subprimecrisis in 2007, triggering the greatest global economic crisis since the Great Depression of the 1930s. The crisis began in the USA, the centre of capitalism, and affected a major part of Europe as well as other world regions. This exposed the fragility of the global financial architecture, and caused unrest about the economic order in several governments and within US society itself, as evidenced by the protest movement ‘Occupy Wall Street’. Despite the intense debate that followed about the reforms needed to prevent a crisis of such magnitude from happening again, few proposals have been implemented, mainly because of the contradictory interests inside the imperialist chain. Added to this, low levels of economic growth in the wake of the crisis have tended to make the environment even less conducive to fresh understandings, stirring up contradictions instead. Given this, it cannot be concluded that the international economic system is more stable, despite the enormous capacity of intervention of central banks, the US Federal Bank in particular, as evidenced in the worst moments of the financial crisis of 2008. Likewise, it cannot be concluded that competition among states no longer exists, and that the problem remains only in the economic sphere. Countries continue to use uneven structures of power to maintain and conquer new spaces of accumulation, according to the interests of their capitalists. During the 1990s, when the USA expanded economically at an unprecedented rate, it managed to maintain its hegemony over other powers, preventing the emergence of autonomous regional strategies with relative success. This did not make the US state more friendly, as Fiori (2008), Gowan (2004), and Sakellaropoulos and Sotiris (2015) demonstrate. In fact, shortly after the end of the Cold War, the central powers adopted some forms of intervention as legitimate, justified by arguments related to violations of human rights,18 the war on drug cartels in Latin America, the fight against corruption, the preservation of international security, and, more recently, the preventive ‘war against terror’ (Bandeira 2014; Sakellaropoulos and Sotiris 2008: 220; Johnson 2004: 31). However, as the law of uneven development prevails, new poles of power are emerging. Cooperation among states has become more problematic due to the growing multipolarisation of the international system, as can be seen in the formation of the BRICS alliance and the Union of South American Nations (USAN), for example, and the relative decrease of US power (Fernandes 2016). This situation helps to explain the growing reaction against US foreign policy, which after ‘09/11’ began to use a warmongering and interventionist language. Since then, the USA has fomented conflict in several parts of the world, ignoring the sovereignty of countries like Afghanistan (2001) and Iraq (2003). Libya and Syria were also targets of US interventions in conjunction with France, Britain and a group of Middle Eastern countries with diverse interests in the region (Bandeira 2014: 382-384). Following the bombing of Libya in 2011, the regime of Muammar al-Gaddafi was overthrown. The same modus operandi was used in Syria.19 However, Russia has played a decisive role in preserving the Bashar al-Assad regime. More recently, the intervention in Ukraine has created strong instability in the region, leading to a referendum on the reincorporation of Crimea into Russia.20 This is evidence that rivalries among the great powers persist, and that Russia is playing an increasingly active role. Finally, it should be noted that, despite the persistent global economic crisis, many countries – including numerous European countries – continue to spend a lot of money on arms (Marshall 2014: 328). According to the Stockholm International Peace Research Institute (SIPRI), global military expenditure reached US$1.68 trillion in 2015, representing a real increase of 1% over 2014. This was the first increase since 2011. But before that, expenditure grew steadily for 13 years between 1998 and 2011 (Perlo-Freeman et al 2016). The USA spends far more on armaments than any other country – 36% of the total in 2015 – but European expenditure should be noted. As shown by Slijper (2013), the military spending of countries such as Spain, Greece and Italy, which were at the epicentre of the crisis in the euro area and have struggled to implement economic austerity programmes at great social cost, remains impressively high. This clearly contradicts the Kautskyan perspective, which predicted a reduction in military spending as a primary result of ultra-imperialism.

#### 11. Private entities have replaced science with expansion- Mars can be the site of societal transformation

Calanchi 21

Alexandra Calanchi (PhD Professor in International Studies @ some italian university), published 26 oct 2021, https://www.tandfonline.com/doi/full/10.1080/14688417.2021.1982401?scroll=top&needAccess=true // HW AW

For more than a century Mars has been at the centre of scientific and philoso- phical debate about human kind’s place in the cosmos, also soliciting scientific articles, novels and movies (Markley 2005). Robert Markley was interested in high- lighting the importance of the red planet as a foil to better understand Earth and as a screen on which human beings projected their hopes and fears. Persuaded of the importance of interdisciplinary planetary research, and aware of the political implica- tions of SF, he encouraged ‘frequent crossings of the boundaries between science and science fiction’ (Markley 2005, 5). He also recommended that Mars could and should enter the orbit of environmentalism. As the struggle between space advocates and environmentalists demonstrates, however, the risk of repeating the errors of the past does exist. Such risk also affects both the dynamics of communication and the written and visual representation/s. The above mentioned fertile cross-over between science and science fiction also inspired Robert Crossley, who wrote a comprehensive literary history of the red planet assuming that ‘Mars is part of our cultural history, a repository of human desire, a reflection of our aspirations, confusions, and anxieties’ (2011, 7). However, his book, more than environmentalism, focuses on the opportunities given by a new colonisation on unprecedented grounds: Mars is not only a locale, a symbol, a mythos, it is also a tabula rasa. It is a place with a past but without a history. [. . .] Mars is an empty page on which **writers can sketch a critique of things as they have been and are in our own world, a vacant stage on which alternative modes of human organization and conduct can be enacted**. [. . .] If humanity establishes a permanent presence on Mars in the coming decades and centuries, the early literature about the planet will constitute that new civilization’s mythology. [. . .] A great many fictions about Mars imagine the moment when the first human beings set foot on the planet. (Crossley 2011, 16-17) Today, the purposes of hypothetical human missions are human expansion and economic exploitation. Our planet is being destroyed by environmental crises, overpopulation, and natural catastrophes enhanced by human intervention, pandemics included. Either we succeed in making geoengineering take control (McNeill and Engelke 2014) or we look outside the window – so to say – and look for other places to ‘conquer’ (sic! May 2017) or simply to go to (Roach 2010). Unfortunately, **nobody can really guarantee that today’s investors and tomorrow’s settlers will show more respect to the environment than we have granted our own home-planet so far** (Barbanti, Calanchi and Farina 2017). At the same time, **the language of space exploration reflects an underlying racism and gender discrimination** which are really hard to overcome (Haskins 2018).

#### 12. The burden of proof is on the negative to justify their arguments for space expansion

Williston, PhD, 20

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Contemporary space expansionists will bristle at this, not least at being associated with a Nazi rocket engineer. But the shoe fits. Von Braun, recall, said infamously that where the rockets come down was “not my department” (an attitude lampooned memorably by Tom Lehrer). By highlighting the lack of serious ethical thinking about consequences running through this entire tradition, Deudney forges plausible connections among otherwise disparate figures and ideas. Many space expansionists have expressed moving visions of scientific progress in lofty and inspiring rhetoric, but the uglier realities of nature and geopolitics have a way of hijacking good intentions. The political naiveté of our fantasy-engorged billionaires might just get the rest of us killed or enslaved. As Deudney says, “though they aim for the stars, they might obliterate the Earth.” It’s time to take the space toys away from them. At the very least this searching study should compel them to drop their uncritical appeals to inevitable technological progress, propped up by a bit of bowdlerized Darwin, and instead provide some real arguments for their grand visions of galactic dispersal. Much more than the latest rocket design, that would mark a genuine advance in our understanding of this cosmically important issue.

#### 1ar theory is legit – only way to check infinite abuse

#### We’re reasonably topical – Appropriation of outer space refers to claims of sovereignty, not just flying around – mars is the only place practical claims of sovereignity by private entities are happening. We don’t change any limits or predictability, we just specify which is good -

#### Spec means clash – musk has a huge base of both fans and haters

#### Means we can’t squirrel out of DA links – a phrase can still be unjust even if you win a DA, but in this debate you get to prove the plan wrong

#### Prevents PICs which are bad because they shift to the fringes of the literature and moot the 1ac – the pic out of everywhere but mars means the neg wins every round since that’s where the literature is