## 1

#### Interp – the aff must defend that all appropriation of outer space is unjust, nnot just unregulated ones

#### Violation – the CX they confirmed that property rights are still appropriation

#### 1] ground – makes it impos to engage bc they’re still defending apapropriation

#### Dtd

#### Competing interps,

#### No rivs

## 2

#### [Ranganathan 16] The aff is not a true equal allocation of resrouces but having the technologically advanced “govern access to global resource *in the name of all*” – UNCLOS and the current international system proves the aff’s framing of space resources as “Common resrouces” justified nothing but interventionist programs at the interest of the hegemonies

Ranganathan 16 [(Surabhi Ranganathan is a University Senior Lecturer in International Law, a Deputy Director of the Lauterpacht Centre for International Law, and a Fellow and Director of Studies in Law at King's College. She is also a fellow of the Cambridge Centre for Environment, Energy and Natural Resource Governance (C-EENRG).) Ranganathan, S. (2016). Global Commons. European Journal of International Law, 27(3), 693–717. | <https://sci-hub.st/https://doi.org/10.1093/ejil/chw037|>] Comrade PW

TOC = Tradegy of the Commons

CHM = the Common Heritage of Mankind

Parochialism = relating to the local, limited outlook and perspective

4 Juxtaposing Hardin and Pardo: Politics and Epistemologies At the outset, the concepts of TOC and CHM seem to emerge from different worldviews for all that they address the same subject – commons. TOC outlines the threat of a dystopian future, overrun with people and under-nourished with resources; CHM grounds itself in a techno-utopian vision in which the oceans will supply fresh resources for continued human flourishing. TOC, evidenced in the politics of its author, is a parochial vision of the world that is split into so many inward-looking ‘lifeboats’; CHM is a cosmopolitan vision of spaceship Earth, in which ‘mankind’ is the ultimate subject of law-making. Decolonization, for Hardin, was the context in which TOC would come to bite, and he was supportive of coercive international relations between developed and developing states; decolonization for Pardo presented the need to think about the needs of developing states and enable their access to global resources – CHM was the encapsulation of these hopes. However, I hope that the analysis in the foregoing sections has given cause to complicate, rather than perpetuate, this summary of differences. Both interventions reveal parochial and cosmopolitan tendencies if we consider where, between home and world, their focus lay. Hardin’s parochialism needs no further elaboration, but it is well to keep in mind that, like other practitioners of the dynamic of difference, his imaginary was a global one – his fear was that a failure to adopt a lifeboat ethics would lead to the Earth’s carrying capacity being exceeded by its population. Pardo’s cosmopolitan proposal, on the other hand, emerged from a parochial ambition, namely to establish Malta’s presence in international affairs and obtain for it the benefits that would flow from hosting the headquarters of some international organization on its territory Moreover, Pardo’s intervention, like Hardin’s, had both illiberal and imperial dimensions. Pardo sought to bring the largest possible area of the seabed within a centralized licensing regime, asking states to forsake national claims to extended continental shelves. Moreover, although he dwelled on the possible appropriation and militarization of the seabed by technologically advanced states, and urged that benefits from exploitation should flow to developing states, his envisaged administrative authority vested the right of rule in the hands of the former. He argued for a special agency that would be led by technologically advanced states rather than UNGA oversight in which all states would have an equal vote. His plea, thus, was for a few – advanced – states to govern access to, and use of, a global resource in the name of all. Although this article does not examine later deployments of CHM and TOC, it is worth mentioning that such assertions have also sought to reframe resources lying within national jurisdictions as objects of global governance.135 However, the illiberal and imperial dimensions of Hardin’s intervention were of a different order; he advocated not simply constraints on economic activity in an international area but, rather, an interventionist American (more generally, Western) foreign policy that would effectively determine the reproductive choices of Third World people – and rejected educative ‘family planning’ approaches embraced by UN agencies and organizations like Planned Parenthood.136 His eugenicist assumptions, clothed in assertions of ecological concern, allowed him to simultaneously defend enclosures and heavy consumption by rich Western people and withhold resources from poor and Third World people. A third theme is the role that an integrative approach played in the production and impact of both TOC and CHM. As discussed above, it is by combining facts and theories culled from various disciplines that both Pardo and Hardin developed their imaginaries of the commons. Both emphasized technology and rationality-based theories as the framework within which to understand social and economic issues. Hardin, building on a biological account of individual selfishness and brute rationality (except where tempered by civilizational influences, as among rich Western people), joined to assertions about the deleterious impact of technological advances that lowered mortality rates of poor and Third World peoples and improved access to food and other resources, argued against both laissez-faire and welfare economics, advocating the far-reaching enclosure of resources and coercive taxes on the use of public goods.

#### [Saunders 21] The aff’s proposal to a multilateral institution on the behalf of all states only legitimizes Global North hegemony and perpetuate neoliberal social relations through leading norm creation and manufacturing consent that reiterates the same of logic of exceptionalism that allows them to stand outside of the international community

Saunders 21[“Saunders, Melanie K --- ‘Conference Diplomacy as the Machinery for Manufacturing Consent: Pax Americana and the Case of the Outer Space Treaty and the World Trade Organization’ [2021] MelbJlIntLaw 4; (2021) 22(1) Melbourne Journal of International Law 102.” Austlii.edu.au, 2021, classic.austlii.edu.au/au/journals/MelbJIL/2021/4.html. Accessed 9 Feb. 2022.|comrade PW]

In the alternative, however, the maldistribution of resources among states and the accordant inequitable distribution of bargaining power does not permit us to presume that states hold 'pregiven, autonomous' individual agency; nor are they 'choice-making subjects'. 59 Similarly, we cannot separate questions of hegemony from those of accumulation, exploitation, dispossession and conflict. In identifying the nature of consent in hegemonic systems, specifically those of international law, theory grounded in historicism tells us that we must avoid being monocausal. 60 And yet, we cannot avoid asking ontological questions as to hegemonic structure and change. As Cox himself outlines: Ontology lies at the beginning of any enquiry. We cannot define a problem in global politics without presupposing a certain basic structure consisting of the significant kinds of entities involved and the form of significant relationships among them.61 Accordingly, we must attempt to recognise the structural essentialism of hegemonic world order whilst rejecting economic determinism. Neo-Gramscian study has directed scholarship towards the social relations of production that form historic blocs in the domestic spheres of hegemonic states, such that a cohesive body of ideology may be globalised and projected onto subaltern states through processes of legitimisation. As noted above, the basic structure defined for this analysis is that of the state itself, which is defined as the condensation of a hegemonic relationship between dominant classes and class fractions. 62 So, it follows that the national context is the only place where a historic bloc can be founded and therefore the same questions of social ontology asked of the global historical structures that constitute world order must also be asked of the historic blocs that form in subaltern states. Alternatively put, consent is necessarily conceived not as a top-down course of action imposed upon a state from outside, but as a product of domestic forces. Understanding that subaltern states necessarily exist in coevolution with civil society requires analysing the conditions of consent as the dialectical product of history and the decisions of subaltern state functionaries. A one-way view of internalisation, like that proffered by structuralists or those neo-Gramscians that deem consent as the 'objectively false' outcome of sheer manipulation, is to overlook the reciprocal interaction between the global and the local, class conflict and mutually reinforcing relations with the global political economy. Instead, subaltern states are best understood through a return to neoGramscian methodology, employed to understand the historically contingent productive functions of the domestic sphere. These operate to create a historic bloc or an alliance between disparate groups and class fractions bound not only by commensurate economic interests but a particular ideology. What separates this process at the subaltern level from the hegemonic are the causal interdependencies and constitutive relationships that exist between subaltern states and exogenous interstate economic and normative structures, from which subaltern states are unable to easily extricate themselves. Subaltern states thus face limited material opportunities and are constrained relative to the strength of norm legitimisation previously undertaken in the system. So, agency is not necessarily determined, but it is shaped and constricted by historical structures. The case studies below detail how these pressures manifest in conference diplomacy. The co-dependency between subaltern states and historical world structures is revealed in the success of threats of exit, red line negotiation and dictatorial modes of persuasion employed by hegemons. It can also be seen in the adoption of hegemonic normative ideals by subaltern states in the pursuit of relative gains or perhaps as the only viable alternative to material deprivation. In consequence, hegemony remains a tool for the exercise of power. For the hegemon, the productive tension between norms and material resources allows them to manoeuvre the machinery for the organisation of consent over a disempowered subaltern group. Consent, therefore, is not the absence of contestation but rather a term of art, used to describe a situation in which a state participates in the process of its own subjugation. Thus, manufactured consent is neither false nor given unburdened by both material and normative restraint. III THE OUTER SPACE TREATY The events preceding the adoption of the OST provide a useful vehicle for considering the relationship between dominant powers, conference diplomacy and multilateral institutions. Exaggerated material polarity in the space industries could lead one to conclude that the OST is best understood as heavily determined by power inequality. Similarly, the conclusion of a multilateral agreement could be heralded as a great success of plurality, considering the lack of material or technological drivers for cooperation. The principles established in the OST had been previously advanced in various non-treaty forms, including UN General Assembly Resolutions, informal agreements between states and diplomatic statements. The OST represented an attempt to combine these agreements into a unitary and coherent international space law, promulgated under the auspices of the UN General Assembly as part of its campaign for the progressive development of international law. At the time, the world was divided into two great power blocs, each comprising either the US or the Soviet Union, their allies and client states. An assortment of neutral European states and the emerging Non-Aligned Movement occupied the peripheries of this otherwise bipolar system. This section will trace the evolution of the major achievement of the OST and the characterisation of space as the global commons and in doing so evaluate the extent to which hegemonic management of the negotiations influenced its conclusion. A The Commons When the OST was unanimously adopted by the UN General Assembly in 1966,63 the legal character of space and celestial bodies was codified into treaty law. 64 In ratifying, states acknowledged that space, as an area outside the bounds of national jurisdiction, could not be subject to national appropriation nor claims of sovereignty. 65 It was to be free for exploration and use by all states in conformity with international law and reserved for peaceful purposes. 66 It was, therefore, to be considered as part of the global commons. 67 A High Seas Analogy The OST's adoption represented the culmination of a decade of negotiation that began in 1958 with the ad hoc formation of UNCOPUOS, a body mandated to study the legal problems anticipated to arise from the exploration and development of space, and to recommend accordant legal principles for international consideration and agreement. 68 At the time negotiation began, spacefaring capabilities were even more unevenly distributed than economic or political capabilities: until 1972, only the US and the Soviet Union possessed the ability to send humans into space, place satellites into geosynchronous orbit and launch large space objects into or beyond Earth's orbit. Considering this, realist theorists of international relations would rightly infer that each state's effect on space lawmaking would be commensurate with their spacefaring capacity. 69 Power in negotiations would echo the prevailing distribution of capabilities and be concentrated with the superpowers, allowing the US and the Soviet Union to define the rules governing space activity. Realists would further anticipate that the superpowers would look to create the political conditions that maximised their capacity for unilateral action, granting a wide discretion for states to prosecute space activity. Intergovernmental management or oversight of space activity is unlikely, and, aiming to further entrench their duopoly on space technology, law that seeks to alleviate the barriers to entry into the space industries caused by high technological and financial capitalisation costs would be fervently avoided. 70 Clearly, realism struggles to explain the decision of the US and the Soviet Union to treat space as a commons and in doing so grant communal rights to all states to access and exploit space, providing sufficient legal grounds for all members of the international community to demand participation in lawmaking with respect to its use. 1 At the commencement of negotiations, the superpowers did not have consensus among themselves, and, as each was unable to coerce the other, convergence had to occur through diplomacy. It should be noted that, in the case of shared preferences, as the sole providers of the good in question, the US and the Soviet Union could have imposed their will and brought the remainder of the international community into line with their state practice with a crystallising effect on customary rules. Nevertheless, they disagreed, and UNCOPUOS was considered the appropriate forum to solve the ensuing coordination problem. Rather than conceiving of a completely new system of regulatory principles to define the legal character of space, the international community chose to consider the implications of treating space as akin to either the High Seas or national airspace. 71 Each analogy intimated very different basic rules for state activity in space. The High Seas analogy suggested that space would be open to access and exploitation by all states in accordance with international law, that national appropriation and claims to sovereignty were to be prohibited, 72 and that states were to maintain jurisdiction over their nationals and 'flagged' vessels.73 Alternatively, the national airspace analogy would lead to the upward extension of national jurisdiction. States would be required to seek advance authorisation to transit and act within another state's national airspace, while maintaining enforcement jurisdiction over all persons or craft within their own territory.74 The disagreement between the US and the Soviet Union concerned which analogy was most appropriate, as each had distinct consequences for the superpowers' security interests. 75 With military brinkmanship between the two driving both to seek security advantages over the other, space presented an opportune vehicle to gain at the other's expense by utilising newly developed technologies. The Soviet Union was predominantly concerned with intercontinental rocketry for the long delivery of nuclear weapons. With little opportunity to establish US-proximate military bases in foreign states, the proliferation of US military bases on allied territory throughout the Pacific, the Middle East and Western Europe made the development of weaponry capable of reaching the continental US a priority for the Soviets. 76 By contrast, the major security challenge facing the US was the collection of reconnaissance information. 77 While they were aware that the Soviet Union had an interest in intercontinental weapon development, 78 its closed political system prevented the US from keeping abreast of Soviet progress. 79 Space reconnaissance technology would permit the US to penetrate behind the closed borders and opaque domestic politics, and keep track of Soviet weapons development. 80 For this reason, the US favoured the High Seas analogy, which would protect their freedom of overflight and allow the collection of reconnaissance information without interference. For the Soviet Union, there existed a clear information imbalance in their favour that they sought to protect. By pursuing an analogy with national airspace, they were signalling a preference to reserve their right to prevent transit through their 'airspace' and intervene with any space reconnaissance satellites that might be employed against them. 81 Both states communicated these positions in competing draft resolutions submitted to the First Committee of UNCOPUOS.82 Negotiating records show that most states, including Non-Aligned states, found a High Seas analogy more persuasive for several reasons. Some posited that a lack of protest to the launch and operation of orbiting telecommunication satellites offered proof of the impossibility of national appropriation in space.83 Others emphasised the 'absurdity' of the indefinite upward extension of sovereign authority. 84 There was significant support behind the call to recognise space as owned by, 85 or belonging to, the common domain, 86 which could be limited only by properly established international law, a view that was actively proffered by US delegates. 87 This informal coalition in favour of US preferences drove the Soviet Union to withdraw their draft resolution, 88 arguing that unanimity was both essential to the progression of space law and proving impossible to attain. 89 Then, noting that the membership of UNCOPUOS was Western-centric and inequitably representative of US allies, the Soviet Union announced that they would cease cooperation with UNCOPUOS.90 Over subsequent years, the Soviet Union informally engaged in diplomacy with UNCOPUOS members and were kept informed of the direction of Western and Non-Aligned opinions. 91 Their position on the legal character of space shifted in 1960 by acquiescence, when they raised no objection to the launch of the US's first camera-equipped reconnaissance satellite. 92 Then, in 1961, they accepted the International Co-operation in the Peaceful Uses of Outer Space ('Resolution 1721'),93 which expressed agreement on the principle that space was free to use by all states and could be owned by none. 94 Passing unanimously, this resolution ended the debate as to whether to engage a High Seas or national airspace analogy. In 1962, the Soviet Union reengaged with UNCOPUOS and agitated to have the use of space for the collection of intelligence information in the territory of foreign states declared inconsistent with Resolution 1721 as an alternative means to prevent US reconnaissance. 95 This position was later abandoned, when tensions between the Soviet Union and China escalated, causing the former to realise the value of remote reconnaissance given the similarly restrictive nature of Chinese domestic politics.96 This tug of war between the US and the Soviet Union is easily comprehended by classical international relations theory: each dominant power pursued a position that aligned with their security interests and altered their position as those security interests changed. There is some suggestion that the pressure applied by smaller states to the Soviet Union, in withholding consent, drove the Soviet Union to reconsider. 97 As a result, it was the US that neutral and NonAligned states coalesced behind. This is, in part, attributable to the reluctance of states to put forward proposals inconsistent with the preferences of a superpower, representing strategic self-interest on the part of smaller powers, whose connection to the space lawmaking process remained fragile and who therefore tactically employed cooperation as opposed to competition. It is also attributable to the successful persuasion of smaller states by the US, in providing acceptable normative justifications for their preferences as opposed to making material threats. The High Seas analogy was more consistent with the pervasive equality norms in the UN system, and as will be discussed in Section B, this made it the more permissible option to remaining states. Accordingly, we can situate UNCOPUOS within a collection of international norms and recognise the success of the US's legitimating justification in achieving their security preference. 2 Consensus In the period following the acceptance of Resolution 1721, smaller states reaped the fruits of their labour. Now that the analogy for the legal character of space was decided, it was to be determined how the overarching principles were to apply to specific situations of a distinctly 'space-like' character with implications for the rights of spacefaring states. In doing so, smaller states were able to pull the US (the Soviet Union had at this stage withdrawn from UNCOPUOS negotiations) towards a more communitarian definition of the 'commons' than it may have otherwise preferred, thus securing their position at the bargaining table. At the time, it was the practice of auxiliary bodies of the UN General Assembly to self-select their decision-making procedure, and weighted or simple majority votes were commonplace. 98 Small powers were aware that if replicated in UNCOPUOS, the superpowers, with the support of their corresponding blocs, would be capable of controlling its functions. As such, in 1962, small powers successfully campaigned for the adoption of consensus decision-making procedures, with states thus agreeing that all promulgated agreements created under its auspices be mutually constituted. 99 As the lawmaking function of UNCOPUOS relied on the consent of member states, this agreement, as with any agreement relating to form and function, was non-binding. 100 Accordingly, several delegations took the position that the language of the OST should reflect a future commitment to consensus-building. 101 The notion of sovereign equality was a prevailing norm of key importance following the enactment of the Charter of the United Nations and the flurry of activity to follow, and accordingly, remained fresh in the mind of member states. 102 Thus, it was proposed that the OST would qualify the freedom to act in space with a requirement that any activity be carried out 'on a basis of equality' ('the provision').103 Recognising this as a 'red line' for small states, the US hinged their support for the provision on two key security preferences, threatening the relegation of the provision to the treaty's preambular paragraphs and thus depriving it of binding force. 104 First, on the question of demilitarisation, there was an appetite among Non-Aligned states to restrict the 'use' of space to exclusively peaceful purposes. 105 As alluded to, while it was not a priority of the US to pursue intercontinental rocket technology, the development of ballistic, particularly nuclear-equipped, weapons remained a central aspect of their security strategy, as was reconnaissance. 106 The use of orbital patterns and high-Earth atmosphere was considered essential to the proper functioning of these practices and thus too intrinsically linked to their security calculations to be sacrificed. 107 Accordingly, the US acceded to a departure from the ordinary language of the Treaty, which referred to space in its totality, limiting demilitarisation commitments to the surface of celestial bodies. 108 Second, many states sought further clarification on the extent to which exploitation could be considered a 'use' pursuant to art 1, going so far as to propose that any exploitation of space be centrally administered by an international body. 109 Recognising that any resource-based advantage that they held in terms of space exploration would be compounded in the field of exploitation, the US argued that the treaty was ill-equipped to deal with problems beyond 'the present stage of knowledge and development', 110 and thus questions relating to settlement and exploitation did not require priority treatment. 111 So, the US offered their support for the provisions' inclusion in the operative text, thus providing for conditions of international cooperation in space on the basis of equality. 112 Accordingly, it is correct to assert that in real terms the existing distribution of capabilities and power among states prevailed in the conclusion of the OST. It would also be true to characterise the utilisation of conference diplomacy by smaller states as overachieving, in securing equal standing in an industry they had little to no hope of participating in. However, despite enshrining de jure sovereign equality into the OST, the terms of the arrangement were almost entirely dictated by the US. Utilising their superior material resources, the necessity that they participate in any legal regime seeking to regulate space and their concomitant influence, the US were able to extract privileges that guaranteed freedom of action and allowed them to continue space development unperturbed. On the one hand, establishing the commons represented a ceding of authority by the US to the international community: they would now need to persuade other states into accepting their position in future matters. On the other hand, it entrenched a system whereby the US retained a veto-like ability to prevent lawmaking antithetical to their interests. Mirroring the regime discourse of neoliberal institutionalists, both the superpowers and smaller states compromised to coordinate relative gains. Realist expectations are indeterminate in predicting the complexion of this bargain. That being said, the above discussion of the OST provides an accurate illustration of the role of international institutions as conceived of by both realists and neoliberal institutionalists: international organisations are merely forums for the expression of power relationships. 11 3 While realists and neoliberal institutionalists may disagree on the value of cooperative strategy and the capacity of international institutions to provide solutions to complex coordination problems, they nonetheless agree on the role of institutions to channel state power, concern themselves with the maximisation of strategic gain and recognise that states use international institutions to signal their preferences. Therefore, international law borne from such institutions remains an epiphenomenal response to politics and power dynamics. Here, the competing interests of the three major negotiating coalitions ultimately converged around the position of a dominant power and its allies. As a result, a measure of sovereign equality was established, improving the position of smaller states relative to the former status quo and their negotiating rivals. Even so, the security interests of a dominant power were realised and their stranglehold over the resources of space development secured. Nevertheless, such classical theories are ill-equipped to ground an analysis of the garnering of consent as carried out by the US. B Why Multilateralism? This narrative, describing how the defining principle of the OST came to be, drawing a direct and exclusive link between power and the creation of law, ignores the socialising and legitimising effect of norms in an international system on hegemonic actors. Political power does not operate on its own, nor is it selfconstitutive. Rather, it is wielded by actors, guided by the pursuit of preferences and with an understanding of both the material and normative conditions in which they operate. To reduce the OST to a function of political power is to ignore its historical and social context. At this point, realist and institutionalist theories of international relations lose their explanatory force and it becomes necessary to resituate the OST in its contemporaneous international system, pursuant to neo-Gramscian methodology. As great powers, both the US and the Soviet Union harboured the material capabilities to pursue their respective space development goals and were endowed with sufficient resources to do so without reliance on the cooperation or support of other states. As Bruce Cronin suggests, [g]reat powers win wars and dominate the global economy. Leaders of hegemonic states thus often believe that they can convert their resources into preferred outcomes and therefore are more likely to pursue risky unilateral adventures.114 Consequently, some scholars have argued that US material capabilities allow it to stand outside the international community, granting it the accordant absolute autonomy (for reasons stemming from Soviet Cold War praxis, their lack of participation in late-stage negotiations of the OST render their role in norm socialisation less relevant to the ensuing discussion). 115 This belief, that hegemonic power entitles states to benefit from unequal rights would suggest that multilateralism is superfluous to hegemonic interaction with other states. This overlooks the relational component to hegemony, conceiving of the international system with only hegemonic states in mind. At the relevant time, the US was situated atop a hierarchical ordering of states in the Western liberal sphere and its subaltern periphery by virtue of those material resources, meaning they were inextricably dependent on the welfare of this system to maintain their position. 116 By this analysis, the adoption of the OST could be traced back to the creation of the 'West' at the end of the Second World War, which saw the subsumption of the Allied great powers and a smattering of subaltern states under the tutelage of the United States, a relationship grounded in the dominant ideology of free-market economic compatibility and liberal democracy. 117 Maintenance of the hegemonic order in a pluralistic system requires both leadership in norm creation by the hegemon, for the purpose of legitimising that leadership, and the consent of the subordinated. 118 Therefore, regardless of material dominance, the hegemon remains entangled in the norms of the system and, accordingly, is 'constituted in such a way that they seek normative justification for their actions'.119 It follows that a hegemonic state will seek to shape the standards of legitimacy towards the end of institutionalising their preferred norms. Here, multilateralism had become the standard form of international lawmaking, and its increasingly 'egalitarian' form presented a challenge to US dominance. The end of the colonial ordering of states and the accordant elevation of the nation-state as the primary unit of recognition by the international community brought with it the norm of self-determination. 120 With self-determination came sovereign equality. This, as well as the rise of the Soviet Union as a hegemonic challenger and the potential for the emergence of a hostile majority of developing states justified the institutionalisation of US leadership, to rationalise their material dominance in the form of the liberal world order. Recognising this, foreign policy elites within the US State Department viewed the UN and its progressive development of international law as crucial to the hegemonic ordering of international relations. 121 In this regard, the UN and its auxiliary bodies were employed by US diplomacy as 'the machinery of organizing consent' and the mechanism to popularise their preferred norms in the resulting ordering of states. 122 Concerning space development, the US valued their freedom to act without interference from their hegemonic rivals and the international community. Rather than act unilaterally, the US responded to the disinclination of the Western liberal order to formally recognise hierarchy and took the multilateral route to protect that freedom against potential challenges. So, unprompted, in 1958, the US asked the UN General Assembly to consider the future of the international regulation of space activity. 123 Then, leading an ad hoc coalition of states, the US introduced the first draft resolution calling for the establishment of UNCOPUOS. 124 In doing so, President Eisenhower spoke of the opportunity that was presented to the international community 'to control the future' of space exploration and asked the international community to allow the US to assume its role at the forefront of it. 125 This conduct reflects the US's understanding that exercising rule by means of international law and basing an institution on consensus decision-making rather than weighted voting might enhance its authority. Thus, by enveloping security preferences in norms of egalitarianism, the US was able to successfully articulate and entrench their chosen rules of conduct in space activity, with the effect of legitimising their future activities in space despite those activities representing a technological manifestation of material dominance. Importantly, the assumption of these norms by the US aided the persuasion of other states in favour of their preferred position. It is necessary to reiterate that neo-Gramscian theory does not require legitimacy through consent to preclude the existence of coercive behaviour.126 International organisations can be established through dictatorial tactics, and it often remains those tactics to which dominant powers revert in order to manufacture consent in the absence of organic agreement. Importantly, the discursive processes of negotiation and bargaining and the hegemon's construction of their image is centrally important. For example, while pressing to establish UNCOPUOS as a body comprising 18 members, of which 12 were states with which the US had military agreements, granting them an 'automatic majority', they couched such conduct in the promotion of equitable geographic and technical representation. 1 2 7 Moreover, they spoke of their 'good will and [a] desire for harmony' 128 and a belief in the representation of small powers in a properly functioning international community of states.129 These ideas permeated most of US diplomacy in the creation of the OST. Therefore, while it is also true that the coercive tactics discussed in the previous section were a reflection of the muscle provided by the US's superior material capacity and the power resources accorded as a result, they could be perceived by other states as part of an authentic pursuit of pluralism. In this sense, this process of conference diplomacy can be considered the dialectical socialisation of the international community to the preferred norms of the US. What resulted was the creation of a multilateral agreement that reflected universal values and fostered agreement, in the image of pluralism, thus justifying the future conduct of the hegemon and the vertical power relationships enabling it. By reframing hegemony as the social relationship between states in a hierarchical system, in which the crucial element is the legitimation of power inequalities, we can better understand why the US chose to enter the multilateral arena when it came to their conduct in space. 130 Therefore, rather than solely being a power struggle based in materialism, the legislation of the commons, consensus decision-making and the freedom to act in space is revealed to be one of the systemic decisions made by a hegemon as part of a successful strategy of legitimation. As such, the conclusion of the OST reflects the management of conference diplomacy by the US, both in terms of material strength permitting the extraction of privileges and the utilisation of systemic norms to garner the consent of other states in the system.

#### [Landis 21] Capitalism causes warming and extinction – prioritization of profits, commodification of nature, and its impulse to expand

Landis 8-10 [(Tina Landis is the author of a new book entitled “[Climate Solutions Beyond Capitalism](https://store.pslweb.org/Climate-Solutions-Beyond-Capitalism_p_69.html).”) (2021, August 11). “Code red” climate report and the failure of capitalism. Retrieved September 26, 2021, from Liberation News website: <https://www.liberationnews.org/code-red-climate-report-and-the-failure-of-capitalism/>] Comrade PW

The [UN Intergovernmental Panel on Climate Change](https://www.nytimes.com/2021/08/09/climate/un-climate-report-takeaways.html) report released August 9 warns of a “code red for humanity” if we fail to drastically cut greenhouse gas emissions by 2050. Compiled by 234 scientists and based on analysis of 14,000 studies, the new report states that even rapidly cutting emissions immediately means warming will continue beyond 2040 — meaning adaptation measures, as well as immediate mitigation efforts, are crucial. The [report](https://www.ipcc.ch/report/sixth-assessment-report-working-group-i/) states: “Global surface temperature will continue to increase until at least the mid-century under all emissions scenarios considered. Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in carbon dioxide (CO2) and other greenhouse gas emissions occur in the coming decades.” We are currently on track to reach 3 C warming based on global emissions reduction pledges, which would be catastrophic. The report’s [Interactive Atlas](https://interactive-atlas.ipcc.ch/) forecasts various scenarios for each degree of temperature increase and its impact on precipitation and temperatures in different regions globally and shows the dire impacts if we fail to act now. Every corner of the globe is already experiencing ever worsening impacts of the climate crisis — from droughts and wildfires, to temperature extremes, floods and severe storms. Our [climate is unraveling](https://www.liberationnews.org/inaction-from-government-as-climate-unravels-coast-to-coast/) and still little is being done to turn the tide despite decades of warnings from the scientific community and the existence of actual solutions. The Earth’s systems are rapidly destabilizing faster than previous IPCC reports warned, which tend to be conservative in their predictions. If our so-called “leaders” continue to fail to act, humanity’s future is very uncertain as the life-sustaining systems of the planet falter. The endless growth model of capitalism, that treats everything on the planet as a commodity to be exploited with complete disregard for future generations, is the root cause of climate change. The capitalist “expand-or-die” model is incompatible with sustainability and is rapidly driving the majority of species toward extinction — including our own. Meanwhile, the billionaires play “astronaut” in their “space race” as the working class around the globe suffers in the real world from climate change. And the millionaires in Congress waste precious time debating the bandaid passive solutions in Biden’s infrastructure bill that may achieve some minor reductions in greenhouse gas emissions, but do nothing to steer the train off course from hurtling over the cliff. These millionaire “representatives” have proven time and again to be completely out of touch and unconcerned with the plight of those they claim to represent. From COVID relief and eviction moratoriums to an increased minimum wage, they squabble over even throwing tiny crumbs to the working class while they eagerly hand out trillions to the banks, corporations and military industrial complex. These wealthy politicians, and their billionaire corporate backers, can continue life as usual largely free of the climate impacts that the working class deals with in our “new normal.” They can just go to their second or third home if one burns down or gets washed away in a flood. They can shift their investments so that they actually make profits off these disasters. And they likely don’t even notice the increased costs for food and clean water as droughts impact availability — beyond perhaps seeing an increase in their return on investments in these sectors. Their economic status protects them from the reality that the rest of us face. It is poor communities and communities of color that are forced to live in inadequate housing that isn’t weatherized to withstand temperature extremes or to keep out wildfire smoke. It is working-class people who froze to death in their homes in the deep freeze in Texas in February and working-class people in the Pacific Northwest who died in the severe heatwave in June. It is low-income residents in the rural West whose wells are running dry, unable to afford to drill deeper wells, while Big Agriculture drains the precious aquifer for cash crops. It is the immigrant farmworkers who face lethal heatwaves and wildfire smoke working in the fields of California. It is poor communities and communities of color that are forced to live in floodplain areas where the affordable housing is, who have their homes washed away from the ever increasing severe storms. It is working-class urban communities that live in sweltering heat islands where temperatures are up to 7 F higher than in wealthy neighborhoods with trees and vegetation — which during prolonged heat waves can mean life or death. It is working-class people who are priced out of flood and fire insurance, who are left homeless when climate disasters occur. It is indigenous communities and low-income rural communities that bear the brunt of pollution and ecological destruction from extractive industries that make profits while continuing to fuel the climate crisis. The climate crisis is a class war. The rich can install state-of-the-art air filtration in their mansions so they can breathe easily while the world burns. They can move to higher elevation while the coastal areas are inundated by sea level rise. The 1% richest, the capitalist owners, have caused the climate crisis and their wealth should be used to solve it. We must stand up and demand that the government take action to protect the people from the unfolding catastrophe and do everything possible to stem the crisis. We cannot allow fear to demobilize us. There are real solutions and must join together and demand real action. And if our “leaders” continue to stall and make excuses, we must rise up and replace them with people and a system that truly does represent us. And that system is socialism, where the resources and knowledge of society are used for the benefit of all of humanity and the planet. Under socialism, our representatives would be those most qualified and knowledgeable to do the job, not those who have the millions needed to pay for campaign ads and a marketing team. Our representatives would be scientists, ecologists, engineers, medical doctors, educators, farmers and other leaders from our communities, who understand the problems and the solutions. These are the people we need in leadership — people who are workers themselves — who can mobilize all sectors of society to make the transition to an equitable and ecologically-regenerative society where humanity and all life have a positive, livable future.

#### [Beller 17] The language and system of control that capitalism is artificially set up to eradicate the communicability of a revolution, but the spectre of communism still haunts and linger over the continent – the alt is to embrace cybernetic communism that hijacks and interrupts the capitalist forms of control – through attacks on the cybernetic extension of lives, alternative practices, and different ways of living – as a pre-req for revolution to take place

[Beller, J. (2017). Preface to the revolution: digital specters of communism and the expiration of politics. Social Identities, 24(2), 238–254. doi:10.1080/13504630.2017.1321719 ] Recut Comrade PW

This becoming obsolescent of linguistic debate and the wholesale sublation of the political by the economic in the ‘Sekend’ World, is particularly remarkable, given the prior Soviet demands on linguistic acumen. If one buys, even provisionally, the underlying assumption here, that whether nominally capitalist or not, the discursive situation of citizens and their states was being reorganized by the informatics of capitalism by visual, social and linguistic means, than it becomes easier to see that whether via the first world or the second, we seem to arrive by 1989 at the liquidation of linguistic command and thus of politics as such – at least in relation to capitalism. Agreeing with Godzich’s (2014) notion that the ‘amputation of a third of the whole word affects the whole’, we observe that the tech revolution and the collapse of the Soviet Union meant precisely the subordination of linguistic command to capitalist machines and media at a higher level. The colonization of discourse by capital’s different ‘sectors’ (Debord, 1995), meant that neither the word nor the world would be organized any longer by sovereign subjects. Of course it really never was, but the historical development of modern subjectivity in capitalism via the exchange of equivalents posited the subject of exchange not only as equal with other subjects, but as at once a convenient site of command-control and the necessary pathway to freedom. However the bureaucratic organization of production, which we now understand as composed at once of financialized institutions and the importation of bureaucratic thinking into machines in the form of algorithms (characterized by the distinct dystopian possibility of a unified institution/algorithm of Capital at ‘the top’) would foreclose that path and grasp the subject as an interface among interfaces. Language belongs to the bureaucracy and to the machines – which are increasingly the same entities. Google, we note in passing, did not rename itself Alphabet for nothing – it is perhaps more aware than most of the functionalization of language by financialized digitization. The corollary here is that of Moten and Harney’s insight: all that today goes under the name ‘politics’ is in fact the politics of capital (meaning to say the practices of politics are informatic generators that can be harvested as data and metadata for capitalist valorization) and that under current conditions, the removal of the scare quotes from ‘politics’ is no longer possible in as much as the signifier itself is the/a property (in all senses) of capitalist mediation. This, of course, is what is meant by virtuosity at the linguistic level, but it took Moten and Harney, with their careful attention to the persistence of racism, to draw the full conclusion of not just the failure of the political as a category, but, of politicization as symptomatic of a new form of governance structurally subordinated to the logistics of racial capital and therefore a complicit participant in oppression. In this view, politics is a subroutine of computational capital. If we believe Baudrillard (and Franco Berardi says we should), what became mass media in ‘The West’ was always already postsocialist. Commenting on media coverage of Paris 1968 in his 1972 essay ‘Requiem for the Media’, Baudrillard writes, ‘transgression and subversion never get “on the air” without being subtly negated as they are transformed into models, neutralized into signs, they are eviscerated of their meaning’ (2003, p. 283). Baudrillard refers to the ‘imposition of models’ as an aspect of ‘the terrorism of the code’ (2003, p. 285), which he sees functioning as ‘a decentralized totalitarianism’ (2003, p. 286), ‘The code’, which we must here remember to understand was a new way of talking about language within the frameworks of semiotics, communication theory and computation, prevents reciprocity for Baudrillard – who, it should be noted, wrote one of the most important books on capital and sign function, For a critique of the political economy of the sign. For Baudrillard in ‘Requiem’ the code is de facto counter-revolutionary and its very function enacts a postsocialist ethic, since all struggle against hierarchy and the capitalist foreclosure of democratic representation is functionally liquidated immediately through the sheer fact of its reportage. The code contains socialism – in the sense of enforcing its imprisonment and cancellation. It is a medium of governance. Thus it is postsocialist before the arrival of socialism. And therefore, before the arrival of ‘Postsocialism’. Which is to suggest that Postsocialism is the logical consequence of finacialization’s colonization of discourse through code – the very practice and practical application of communication and information theory. Here we begin to get at the deeper meanings and consequences of what is called Digital Culture, 1 and 2. As experiments on Pavlov’s dogs with both acid and with electric shock amply showed, instrumental reason, but one could retrospectively say ‘programming’, applied to reflexes in order to condition or re-condition them in accord with the will of the ‘scientist’ (the word is the same with and without quotation marks, until proven otherwise), may use pain or the anticipation of pain to inhibit even what Pavlov calls ‘the freedom reflex’. Thus we push the date of postsocialism/postcommunism back even further. If by communism was meant autonomy, self-determination, community or communion, or even, as Groys suggests, the reliance on language as a system of command-control over the economy, reflexo-logical programming (pace Eisenstein, who used ideas drawn from Pavlovian conditioning to construct both his theories of montage and his films) hailed a future (premised on Reflexology and shortly thereafter Taylorism/Fordism, and later the deterriotrialized factory of the cinema) was designed to be postcommunist even before the Bolsheveik revolution – unless, perhaps, one considers the revolutionary potential of the destruction of (bourgeois) subjectivity. But in brief we have the foreclosure of inter-subjective reciprocity by the coding of sign function and the organization of ‘subjective’ sovereignty by machinic automation. Thus the Soviet critique of cybernetics under Stalinism, while more truthful about the West than most English-speaking readers will acknowledge, may also deflect or displace some self-criticism. Ben Peters tells us that ‘in 1954 the fourth edition of the Kratki˘ı filosofski˘ı slovar’ (Concise dictionary of philosophy) cast cybernetics as a slightly ridiculous, although still harmful, anti-Marxist “reactionary pseudoscience …”’. In sum, one sees from either side of the iron curtain a generalized movement towards the computational management and administration of social practice – a seemingly necessary evolution for the organization of complexity and scale that confronted the super-powers. From this perspective, Orwell’s three worlds, Oceania, Eastasia and Eurasia, were always-already postsocialist, and the variants of ‘democracy’ as either the Free Enterprise System, the Soviet Union or Communism, were all names for the advance of capitalism. From the standpoint of capitalist hegemony, the various collapses and transformations in the three worlds manifest the ‘objectivity’ of a computational capital that could no longer be dismissed and that tended everywhere to functionalize language as a computational subroutine. Here we approach the full meaning of platform sovereignty. The communism of computational capital As early as 1950 Norbert Wiener warned the world about letting the genie (of cybernetics) out of the bottle and thus of further displacing labor by converting humans into either cogs or irrelevant entities. The emergent ‘human use of human beings’ as Weiner entitled his 1950 volume on cybernetics appears to be at once a continuation of earlier forms of usury, an extraordinary innovation that allows humans to engineer automata enabling the real-time application of statistical and algorithmic methods to human practices such that human metabolic undertakings may be structured and organized through algorithmic governance in order to extract obedience and more importantly, profit and finally, a selffulfilling prophecy haunted by slavery, colonialism, patriarchy, hierarchy and white supremacy in societies that are purportedly postracial, postcolonial and postsocialist. In my own view, this process of cyberneticization is so endemic that it is arguable that all thought has become machine mediated and thus all intelligence is, strictly speaking, artificial – now even more artificial. Cybernetics understood as a development of computational capital is a matter of dialectics and indicates a thoroughgoing transformation of the life-world on a planetary scale. Allowing for some poetic exceptions (which may indeed be as vast as ‘the surround’), algorithmic governance is inexorably imbrecated with thought and practice post 1989, and was already in fact imbrecated with thought in the second world, albeit by other means. The troubling conclusion is that ‘We’ are the intelligence of computers, which is another way of saying that the species has been slated for subsumption by automata and this has taken place differently and unevenly across different sectors. Thus even as we limn the degree to which our own autonomy has been limned by automation, channeling Morpheus from The Matrix (1999) and suggesting that ‘because you are a slave, Neo … ’, does nothing to change the still haunting fact that some slaves are more equal than others. ‘Post-socialism’ in no way vitiates the need for socialism – the conversation on this topic could remember that. Indeed as Atanasoski and Vora (2017) conclude for the introduction to this special issue, The ‘post’ in [postsocialism] signals not the death of socialism, the fall of the Berlin Wall and the disintegration of the U.S.S.R., or the politics of ‘transition’ in formerly state socialist nations, but rather it signifies an epistemological shift that makes evident how the Cold War imposed a false historical binary, delimiting both socialism and capitalism as singular visions and practices. A postsocialist approach to temporality insists that the end of the Cold War was not in fact the end of history, but the re-igniting of the multiplicity of socialisms and socialist legacies acting in the world today. (p. 6) As I have been suggestion all along these dialectical dreams were being captured as they emerged by the very media of their emergence. And yet there are so many dreams. With varying inflections, a kind of totalitarian imaginary has been in play since at least the mid-twentieth century, with roots that go back well into the nineteenth. The real specter of modernity, with its positing of innovation, connection and cosmopolitanism, is communism – a planetary hauntology if there ever was one. The subsumption of the species by cybernetics and computation makes sense, if we heed the shade cast on human exceptionalism by Turing (1950) in ‘Computing, Machinery and Intelligence’. Turing, recall, strongly suggested that there was no way to disprove the possibility that there is a rule set governing human behavior. The implication is that the entire domain of human existence including theology, cosmology and spirituality and more generally thought, is a technical effect – the execution of a program. Computational advancement, and history itself, is thus not rupture but emergence. Understood in this way, artificial intelligence allows for the perception that all intelligence is artificial – at least in the sense that it has no essential being or immaterial spirit. The materiality of the spirit, what Marx must have meant (going out on a limb here) by species being, is, in this framework at least, the world-historical repressed that underpins modernity’s theology of civilization. What was truly spectral in Western civilization’s unprecedented barbarity was not just communism, but its synonym – whatever was meant, however hypocritically or paradoxically, in the highest invocations of ‘the human’. As Bostrom (2014) suggests, the logical conclusion from Turing’s insights were already drawn in 1965 by I. J. Good chief statistician of Turing’s code-breaking team in World War II: Let an ultraintelligent machine be defined as a machine that can far surpass all the intellectual activities of any man [sic] however clever. Since the design of machines is one of those intellectual activities, an ultraintelligent machine could design even better machines; there would then unquestionably be an ‘intelligence explosion,’ and the intelligence of man would be left far behind. Thus the first ultraintelligent machine is the last invention man need ever make, provided that the machine is docile enough to tell us how to keep it under control. (p. 4; Good, 1965, p. 33; cited in Bostrom, 2014, p. 4) The collective loss of human control, visible in what would be historically the sublation of homo sapiens or ontologically the subsumption of homo-sapiens by computation, informed the aspirations for control and thus for Norbert Weiner with cybernetics – the root of which is kubernetes or governance. The loss of the human was to be restored by the saving power of technology. The loss of subjective agency to a total system also haunts the works of Niklas Luhman, Maturana and Varela, and the notion of autopoesis: in which systems can only know themselves and are inherently closed off to any outside. Communication becomes predicated on the non-transcendence of the communicative situation; the loss of the outside based on a self/other dipole proffers the paradigm of emergence, which is itself a variant on totalitarianism in as much as it fully closed. With emergence, whatever crosses the threshold is always already internal to the system. Thus within the framework of computational capital’s autopoesis in which all communication is always-already financialized, anti-capitalist struggle is structurally and thus by definition radically excluded from communicability and is itself in a condition of subalternity, erasure and spectrality.8 To get to this unholy place in which language and psychic function are but valueproductive sub-routines of the violent calculus of capitalist hierarchies and the profit motive (precisely, the autopoesis of capital, and precisely, again, the medium as the message, but in a far more sinister key), one needs, in my view at any rate, the rise of what I call the calculus of the image, and the simultaneous rise of attention economies, to scramble and re-organize psycho-semiotic domain – to mount the ‘liquidation of tradition’ by visuality – and now, to impose with Digital Culture 2.0 the large-scale adaptation of fully computable algorithms that will increase the granular resolution of the social metabolism by the monetizeable interface known as the screen. SOCIAL IDENTITIES 249 The wager I want to close with here (and wager we must) is that from the global sixties forward, there was a radical shift in the organization of sign function and the varied responses to the endeavors of hegemonic powers and their institutions constituted, loosely speaking, an emergent world literature, radical forms of deconstruction, ‘magical’ realisms, the blurring of documentary genres, shifts in narrative forms and forms of embodiment and the generation of discourses necessary for social revolution. Not just counter-histories but counter-codes and anti-codes, rising up in response to digital colonialism, the program of neo-imperialism and the white mythology of technological development. This formation, a dialectical scramble sometimes designated wholesale as postmodernism, contained within itself strains of a rejection of aspects of the standardization of codification and the ‘post-socialism’ of the code. Radical energies fought the computational and financial encroachments of a postsocialism that conscripted socialism by endeavoring to script and thus conscript social interaction before socialism could ever arrive. They imagined communities and communions counter to what was being officially imagined or cancelled. Culture, let’s call it, was, from the capitalist side, macropolitically harnessed as means of production through financialized visuality and digitization, yet, from let’s just say the peoples’ side, this medium of life and meaning had to address or otherwise battle the postsocialist and postcommunist totalitarian conformity hegemonically encoded by the financialized media of representation, or risk betraying the transmission of struggle. Thus radical cultural practitioners encounter such a postsocialist encoding as, to use the formulation deployed by the late Patrick Wolfe to characterize settler colonialism in his essay ‘Settler Colonialism and the Elimination of the Native:’ ‘a structure not an event’ (Wolfe, 2006, p. 2). Following the lead of Kauanui (2016), we might hypothesize that the logic and practices of a settler colonialism that ‘destroys to replace’ and is ‘inherently but not invariably genocidal’, serves as a kind of template for organizing postsocialism as well (Wolfe, 2006, 387; cited in Kauanui, 2016). Capital settles into the bios the way white American settlers settle into native land – through continuing violence. Rather than agreeing with official history that there has been a revolution that was defeated, better I think to say that there was a revolution taking place planet-wide, a revolution that was diverse, multipronged, multi-lingual and distributed – one that is /many that are still here and ongoing. Such a notion signals a new role for poesis in the elaboration-generation-simulation of ontologies and affects, new practices of aesthesis and poesis capable of recalling, amplifying and transmitting strivings for justice and peace. At times this revolution was (these revolutions were) persistence and endurance, at other times active, armed confrontation and at others everything in between. This energy, this non-compliance, this planning behind the scenes, this running from the new law and its police, this aesthetic, pragmatic, and all too real escape from the domain of power, in short, this overt, covert, fugitive struggle, constitutes ‘the general antagonism’. So, not a defeated revolution but revolutions and modes of living that were partially defeated by cybernetic and algorithmic counter-revolution and the programmatic decimation and dispossesion of laboring populations. I say ‘partially’ because to me it makes more sense to say that there remains a distributed revolution, subterranean but nonetheless palpable, a revolution finding lines of flight, forms of fugitivity and community, alternative practices, ways of caring and living, waged everyday, including today, that is at once ongoing and undefeated, albeit its victories, wagers, wounds, requirements and struggles are distributed unequally. This revolution is at once world-wide, in our persons and indeed in the cybernetic extensions of species life, which is also to say, it too burns in the bios and the techne. This revolution is (these revolutions are) wagered and waged against/before/alongside/beyond/beneath capitalist conscription. The end of politics therefore means the ghost of politics, a ‘politics’ there and not there. The end of communism means the ghost of communism. A hauntology, as Derrida might say. Present, denied full appearing, spectral. Representation structured, institutionalized, functionalized and financialized such that under present conditions the full appearance of anything, including communism, occurs only by means of its commodification and hollowing out, for example, China. Precisely this virtualization of the political, a category strategically negated and poetically replaced by analytic feeling in The Undercommons and the affective scenes of its many becomings, haunts postcommunism. Yet even without ‘politics’ or ‘communism’, ‘we’ might feel the practices and spirits of the many forms of love unable to fully appear, by no means solitary endeavors; ‘we’ are aware of many others and of the necessity of many others and of our mutual embrace. Otherwise in the bright white carbon-based light of the digitized day we confront life, virtualized from the standpoint of computational capital’s own brand of ‘communism’. Computational capital: a virtualization of life itself that has sublated what was once thought of as living, a vast distributed automaton driven by a relentless pursuit of value that thus far has kept communism imprisoned in quotation marks.

## Case

#### [Luzt 09] Capitalism kills our subjectivity via the imposition of commodity fetishism and turns their fwk of autonomy – everyone now becomes the obedient servants of capitalism

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Alienated in an imaginary other that presents the appearance of a unified self, the subject of capitalism understands his or her existence through the ‘‘empty speech’’ of the commodity, a me´connaissance that reproduces the negative effects of commodity fetishism on human lives. Always found alongside commodity fetishism, indeed, a condition that forms an irreducible aspect of its continued existence, is profound psychological and physical impoverishment. As a subjective process understood within the entire ensemble of social and economic relations constitutive of capitalism, fetishism is underwritten by a libidinal economy of the subject that functions to reproduce psychic impotence, an economy predicated upon the presence of an absence, or better, a fragmentation of subjectivity engendered by the contradictions endemic to the social relations of production and exchange. Commodities operate as objects of social desire invested with the magical ability to fulfill desires that, because they are substitutions for basic human needs derived from economic relations that simultaneously engender and negate those same needs, can only result in the deprivation of active, creative human satisfactions. In this sense, fetishism functions as a mechanism of concealment: ‘‘[t]he fetish itself\*/a photograph, a lock of hair, or whatever is chosen\*/becomes invested with presence, and so symbolically ‘stands in’ for absence or loss’’ (Gamman and Makinen 1995, 27). The material presence of the commodity as a fetish points to an absence both in the objective relations between subjects, that is to say, the absence of genuine community, and within the psychic economy of individuals. The hidden but all too real effect of this dialectical relationship between the libidinal economy of subjects and the objective economic process is powerlessness, an existential condition of lack that must be reproduced in order to sustain the consumption of substitutive satisfactions in the form of commodities and money. From the standpoint of a Marxian theory of subjectivity, the compulsion to consume or hoard exchange value derives from the substitution of money and commodities for the kinds of activities that would exist in a society of freely associated producers, a process which, through the internalization of social contradictions as much as the material reality of these contradictions, deprives subjects of the ability to develop themselves. In this way, Marx dramatically illustrates the contradiction between the social process immanent in the commodity, a process that entails the progressive domination of human subjects, and the emancipatory promise that all commodities present in their mystified form. To the extent that capitalism requires, under pain of its own extinction, the quantitative expansion of existing consumption, the creation of new needs by propagating existing ones in the widest possible circle, the production of new needs, and the discovery and creation of new use values (Marx 1973, 408), it sets in motion an irrational process that inverts the natural relationship between human beings and nature, a relationship where individuals would have the capacity to realize themselves through their self-objectification in labor, and undermines their capacity to engage in self-originating activities that might genuinely enrich them and allow for the creation of an authentic community. To the extent that the commodity continues to serve as an epistemological category, its true character as a form of domination remains invisible to the subject of capitalism; however, the double existence of the commodity as a material manifestation of relations of domination and as an idealized representation of autonomy corresponds to the double existence of subjects under capitalism. Marx’s theory of fetishism describes not simply the contradictions immanent in the objective relations of production and exchange, but contradictions played out in the consciousness of subjects, contradictions that must be viewed, in part, as constitutive of subjectivity itself. As Jack Amariglio and Antonio Callari aptly put it, Marx’s theory of ‘‘commodity fetishism depicts the social constitution of the individual as a ‘precondition’ for commodity trade as much as an effect of this trade’’ (1993, 190).

#### [Bekus 21] The desire to develop space technology is underpinned by a form of techno fetishism and a desire for symbolic national glory that has come to be associated with notions of capitalist progress and modernity

Bekus 21 [(Nelly Bekus is a scholar with interests in state and nation-building under socialism and post-socialism, the role of cityscape in the construction of post-socialist identity, and the religious and the ethno-linguistic landscape in post-Soviet nations.) Outer space technopolitics and postcolonial modernity in Kazakhstan, Central Asian Survey, DOI: 10.1080/02634937.2021.1893273|<https://sci-hub.st/https://doi.org/10.1080/02634937.2021.1893273>|]

Technopolitics beyond the Cold War superpowers The term ‘technopolitics’ was coined in order to account for ‘the ability of competing actors to envision and enact political goals through the support of technical artefacts’ (Gagliardone 2014, 3). During the Cold War, spectacular scientific and technological achievements served to manifest geopolitical status, and to demonstrate the success of the modernization and development model. Initially, the question regarding the political use of technologies was dominated by studies in technopolitics from the perspective of the major geopolitical actors, namely the United States, Europe and the Soviet Union (Bills 1990; Leslie 1993; Cathcart 1994; Nardon 2007; Mieczkowski 2013). Nuclear power, computer science and space represented the three main technological systems where the competition between two ideological blocs was played out. These technologies have not been in and of themselves technopolitical, as Edward and Hecht (2010, 256–7) acknowledge, but the practice of using them in political processes and/or with political aims in mind constitutes technopolitics. Examining the social and political working of technologies in contexts situated outside the sphere of superpower competition allows us to see how a wider spectrum of meanings is attributed to technopolitics. From the 1950s to the 1970s, in countries such as India, China, South Africa or Israel, technopolitics offered an answer to multiple concerns, such as anxieties about global status, decolonization, the prestige of scientists and engineers, and a strong desire to develop modern scientific and technological infrastructures (Gagliardone 2014). This wider transregional perspective on technopolitics reveals how the symbolic and material apparatuses of technological systems have become intertwined with nations’ search for a coherent and convincing self-image at various stages of consolidating their nation-state profiles in the global arena. For some countries, postcolonial India in the 1950s and 1960s among them, technological achievements were seen as a means that could be used to bolster a newly emancipated national identity by indicating progress, modernity, independence and national rebirth. Indian scientists and technologists believed in technology as a way to advance their nation’s postcolonial emergence. The primary goal of the Indian nuclear programme, in spite of all the controversies and moral dilemmas, was to put India on the international scientific and technological map (Perkovich 1999, 282). A similar drive for the affirmative avowal of a nation’s prestige and the obtaining of the status of a technological power in the international arena underpinned the Israeli space programme. In 1961, when the official announcement of the country’s first rocket launch was made, prime Minister David Ben Gurion declared that this launch ‘proved the ability of Israeli scientists. The entire rocket is made in Israel’ (Haaretz 2010). On the website of the Israeli Space Agency (established in 1983), the history of ‘Blue and White space’ is depicted as the story of the remarkable technological achievements of the Israeli nation, which had become the eighth in the world to launch satellites into space. It also reaffirms that involvement in space has served to ensure Israel’s prominent place in the world. According to Moltz (2012), with the end of the Cold War the world entered ‘the second space age’, which featured new geopolitical taxonomies of space exploration programmes. The international system of the new era is constituted by a multiplicity of greater and smaller actors involved in space exploration, rather than bipolarity. It is also characterized by increased interdependencies and exchange, as the typical space corporations are nowadays multinational, relying on the use of technologies from more than one country, and marketing their products and services worldwide (14). What is also emblematic of the second space age is the fact that a new epicentre of space activity is now situated in Asia: besides the United States, Russia and the countries that make up the European Space Agency (ESA), multiple rapidly developing space programmes are located in this region. Alongside China, India, Japan and South Korea, countries that have traditionally taken the lead in Asia where space is concerned, such as Australia, Indonesia, Malaysia, North Korea, Pakistan, Singapore, Taiwan, Thailand and Vietnam, all now have significant space plans of their own. The countries of Central and South America as well as those in the Arab world have also engaged in the development of space science, which has been reinvented as new ground upon which national and regional interests intersect with international effects and cosmopolitan thinking about the globe (Determann 2018; Johnson 2020). Kazakhstan with its aspiration to join the club of spacefaring countries shares many of the same motives as the other semi-peripheral countries for developing space programmes, including scientific–technological progress, national security and status within the global arena. Essentially, where semi-peripheral or postcolonial states that have recently gained independence are concerned, ‘internationalization’ is not simply a condition, but a cherished value that helps to boost their symbolic standing both on the global stage and in the domestic arena (Bekus 2021). Involvement in the development of space technology that relies on international cooperation in this context emerges as one of the constitutive elements of the desired international perceptions of the country. Affirmative modernity of outer space Much like nuclear technologies in the 1970s and 1980s, space has come to represent ‘modernity’ and the promise of gaining new economic and social benefits from the application of advanced space technologies to current problems. Spacefaring capabilities have long been associated with progressive nationhood, providing spectacular evidence of a nation’s technological prowess and standing on the world stage (Mieczkowski 2013). As in the case of many postcolonial states, the space programme in Kazakhstan initiated by elites embodies complex dilemmas regarding the country’s development and its place on the global map. Official Kazakhstani technopolitics has met with resistance from those who define the realm of Kazakh culture, tradition and science as lying outside the Soviet modernization project, which they deem external and anti-Kazakh by definition due to its intrusive and transformative nature. This confrontation reproduces the postcolonial process of creative tension between ‘modern’ science and technology and vital elements of a socio-cultural heritage that can be observed in many countries of South Asia (Arnold 2000). The Kazakhstani state seeks to equip the retrospective national idea with a technological aspiration – the space programme – which is meant to elevate the landscape of history and tradition and to embody its future. The outer space programme in Kazakhstan emerges as the privileged instrument of identity management and state advancement. In a bid to demonstrate involvement in a scientifically advanced space programme, which can stand in for development, the state seeks to produce a modern fetish. The link between space technology and a refashioning of national selfhood invokes the capacity of the artefact to signal a complex, polyvalent message, what Appadurai (1986) has called the ‘semiotic virtuosity’ of the object. The transformative power characteristic of the fetish is associated with the belief held by ruling elites that becoming a spacefaring nation would bring about affluence, recognition and a respected status on the global stage. The mere possession of something owned by the West, namely, ‘rich world technology’ (Edgerton 2006), is seen as ‘synonymous with the re-creation of the structures of “advanced” production, lifestyles, histories, and societal context within domestic space’ (Krishna 2009, 72). A technologically advanced artefact, such as the space programme in Kazakhstan, is expected to be both integrated into the narrative of national identity and to describe the trajectory of its future development. Space technology and promises of the nation’s bright future thus function as methods to secure this same future (Brown, Rappert, and Webster 2000, 10). The perception of the Soviet space legacy in Kazakhstan differs essentially from that of its nuclear weapons facilities, which the country had inherited from the USSR and gave up in 1993.1 This decision on the part of Kazakhstan’s leadership could be seen as a form of de-Sovietization and the assertion of a new state sovereignty by virtue of its entering the global community with the status of a non-nuclear state (Abshaparova 2011, 1541–2). The space legacy of the Soviet Union, on the contrary, became effectively recycled in the creation of a new image of the Kazakh nation.

#### [Heins 20] Idea of property rights encourages private militarization – commercial can be repurposed easily and even rocks can become militarized for conflicts

Heins 20 [Heins, Robert. “Shoot for the Moon, If You Miss You’ll Land among Valuable Asteroids: An Analysis of the Legal Ramifications of Asteroid Mining.” SSRN Electronic Journal, 2020, papers.ssrn.com/sol3/papers.cfm?abstract\_id=3743074, 10.2139/ssrn.3743074. Accessed 23 Jan. 2022.|PW]

C. Private Militarization While claim jumping in asteroid mining may not be as commonplace as it was during the California Gold Rush, even isolated instances could lead to organizations seeking to defend their claim and the resources they have mined. Like ‘49ers defended their claims from other miners with muskets and pistols, asteroid mining corporations will realize the need to defend themselves from each other as well, but with different weapons. Although the Outer Space Treaty bans state actors from deploying weapons of mass destruction in space, the deployment of other weapons is not without precedent.134 In 1974, the Soviet Union launched the Salyut 3 station.135 Officially a reconnaissance platform, the station also included a modified aircraft machine gun for station defense, but it was never used. 136 Since 1985, the United Nations’ Conference on Disarmament has been attempting to create a Proposed Prevention of an Arms Race in Space (PAROS) Treaty that would require States parties to prohibit placing any weapons in space.137 In the early 1990s a few Western countries—led by the United States—strongly opposed the treaty, and found it unnecessary because there are no weapons, and therefore no arms races in space. 138 Now though, outside of the United States, nearly every country supports the creation of a treaty, with a near unanimous vote by the United Nations General Assembly approving the PAROS resolution.139 Other countries, such as China and Russia, have continued to support a treaty, and in 2008 the two submitted a draft treaty entitled “Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force Against Outer Space Objects” to the United Nation’s Conference on Disarmament.140 The PAROS Treaty has made little progress and is still in discussion in the Conference on Disarmament, due in part to a lack of support from the United States.141 The United States has stated that part of its disagreement with the treaty is its inability to define space weapons, but others speculate the lack of support stems from the United States’ interest in developing hypersonic weapons.142 While the PAROS Treaty remains in limbo, no other treaty exists that prohibits nonstate actors from deploying weapons in space.143 Competing interests, coupled with the lack of uniform regulation, would likely prompt private entities to develop defense strategies—because of the heightened need to deter interference from other actors—and cause other entities to do the same. As a result, private companies might discourage potential attackers by building up their offensive and defensive capabilities and possibly going so far as to retaliate against others if interference ultimately occurred. 144 Military technology can function efficiently in space without any major changes, and furthermore things not commonly viewed as dangerous could be weaponized. For example, going fast enough in orbit, a small rock would have enough energy to destroy an orbiting satellite.145 Additionally, China, India, Russia, and the United States have successfully tested anti-satellite weapons.146 These weapons are based on missile defense systems and were first tested in the late 1950s.147 These anti-satellite weapons, along with conventional weaponry, would allow for private entities to begin defending their assets in space with relative ease, leading to dangerous possibilities. The threat of militarization in space, either private or public, cannot be overstated. Today, many rely on satellites for a variety of important daily tasks, such as civilian and military GPS, weather monitoring, television broadcasting, and transmitting business transactions.148 If any sort of space engagement occurred between either states or private organizations, satellites could be targeted or unintentionally become collateral damage from space debris. Their loss would create a massive security issue and leave critical services on the ground nonfunctional until the satellite could be repaired or replaced.149 If this occurred, there would be very little recourse for countries or private entities to take. While it may be possible for the Liability Convention to require one country to compensate another for any destruction it caused, it would more likely lead to rising tensions and increased brinksmanship between countries. Additionally, if space debris in orbit increased, the positioning of future satellites or any future launches would become more difficult, as any launch or orbit would need to be calculated around the debris to avoid destruction.150 Depending on the type of weapon a country deployed in space, any location on Earth could also be targeted. While it is not likely that a private entity would wish to use force against a country, the possibility exists. No rational State would want a nongovernmental entity to have the capacity to target it at will.

#### [Way 18] The Aff isn’t radical enough, stopping private entities only means handing over the violent space exploration to governments which sustains

Way 18 [Tyler A. Way is a student at Bowling Green State University. “The Space Gap, Access to Technology, and the Perpetuation of Poverty.” ScholarWorks@BGSU, 2018,|<https://scholarworks.bgsu.edu/cgi/viewcontent.cgi?article=1064&context=irj> | Accessed 21 Jan. 2022.] Comrade PW

The Role of Space Technology for Promoting Economic Development and Inequality Scholars in Economics and International Relations (IR) have looked at the costs and benefits of investing in the space sector as an economic development tool for rich and poor states. Scholars and practitioners of space technology politics reach divergent conclusions regarding this issue.1 Weeks (2012) examines the consequences of the space gap caused by increasing capabilities in space technologies by developed states, which is disproportionate to the level achieved by developing states. She proposes solutions for dealing with the inevitable growth of wealth inequality in the world: “this is the time to discuss equality. Once societies in outer space are established it will be too late” (Weeks, 171). Her views on the inequality which is continuously reproduced stands in contrast to others in the discipline of international relations. In her opinion, the international community must educate the populations of all states to mitigate the issue of inequality. In stark contrast to this view, Julian Reid argues that the information gap, created by increased connectivity, is inevitable, and the competition between those connected and disconnected to the technology is nothing more than a cultural battle between the majority and the minority (Reid, 613). His commentary ignores issues such as wealth inequality created or perpetuated by this information and technology gap, thereby implying that this gap is ultimately inevitable. The work of Reid discounts the need to establish connectivity among developing countries by identifying it as a form of western imperialism. According to him, connectivity is the true “future normal,” but information disconnect is equally valid. Establishing connectivity as the sole method of engaging in a modern world leaves out the possibility for a non-connected life to be chosen and viewed as equally viable. Reid means to articulate the lower level of connectivity should not imply lesser contemporary cultural value. Reid’s argument relies on the premise that not acting to combat the digital divide would benefit all states on earth. This is an example of non-decision as a use of power to maintain the status quo. Non-decision is the strategy to avoid deliberately making a decision regarding an issue in order to preserve the power structure put in place (Dahl). In International Relations, nondecision can be a tool of realism in a zero-sum system. In other words, one views any theoretical gain by an adversary as a loss by the state. In regards to technology development by the developing world, the developed world could decide not to act or aid in the development process whereas giving this aid would be equal to giving up the power these states hold over the technology-starved global south. Economist Vernon Ruttan looks at whether a perceived military threat is a prerequisite for development in the realm of space in addition to other facets of technology. This analysis will focus on his work regarding the development of space technology, in particular, how conflict serves as a necessary requirement for such development. Fueling technology development are two drivers of innovation. Whether space technology is created through technology-push and/or a demand-pull, the result is the same; both are incredibly vital to widespread innovation within technology policy and development (Peters). Ruttan traces the development of most weather, communications, and navigation satellite technology to their origins within NASA and the Department of Defense, although these technologies nowadays are primarily used by civilian government agencies and purposes (Ruttan). Ozgur Gurtuna’s work (2013), on the other hand, further adds to the exploration of the economics that impact the evolution of private and public space sectors. He describes the revenue streams that are generated by the space industry. The statistics in Gurtuna’s research clearly highlight the extent to which the space industry has contributed to the economic welfare of the United States.

### AT debris

#### [H&N 21] Framing outer space as “empty” and “pure” establishes space as a place for hegemonic engagements and intervention to fulfil the manifest destiny

Hunter and Nelson 21 [Hunter, Hannah, and Elizabeth Nelson. “Out of Place in Outer Space?” Environment and Society, vol. 12, no. 1, 1 Sept. 2021, pp. 227–245, www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#bib52, 10.3167/ares.2021.120113. Accessed 19 Jan. 2022.] Comrade PW

Geographical Imaginations of Outer Space Outer space is a site of intense imagination and creative speculation ([McCurdy 2011](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#bib64)). At the same time, certain orbital locations are accessed so routinely that they may be considered banal rather than awe-inspiring ([MacDonald 2007](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#bib58)). The breadth of geographical imaginations of outer space are beyond the scope of this article. We focus here on some of the key geographical imaginations that underpin engagements in Earth's near space. Exploring hegemonic stakeholders’ framings of and engagements with outer and orbital space allows the examination of dominant geographical imaginations and the ways they define orbital debris. In particular, ideas of “empty space” and “purity” have shaped conceptions of orbital space, what it “should be” for, and how it might be inhabited, exploited, or protected. One consequential geographical imagination is the framing of outer space “as an empty vessel, or, more accurately, one with profound but specific forms of both absence and possibility … awaiting purposeful inscription by the human species” (Kearnes and Van Dooren 2017: 182). This imagination has inspired and legitimated hegemonic engagements with orbital space, particularly by state actors. Julie Klinger understands this imagination as one in which “the environments of outer space are recast as strategic assets that must be instrumentalized to increase state power and authority” as part of the “nationalist performativity” of outer space endeavors (2019: 3, 13; see also [MacDonald 2007](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#bib58)). The term “frontier” is embedded in scientific, state, and popular narratives of outer space exploration, with roots in the “final frontier” narrative of the Cold War ([Rand 2016](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#bib85); [McCurdy 2011](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#bib64)). Daniel [Sage (2008)](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#bib91) argues that US politicians and NASA continue to legitimize their extraterrestrial exploits with the idea of outer space as a frontier that must be explored and exploited to fulfil the geographical imagination of American manifest destiny. “Frontier” has origins in the violent colonization of the American West ([Benjamin 2003](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#bib8); [Sage 2008](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#bib91); [Messeri 2016](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#bib66); [Rand 2016](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#bib85)). It evokes extraterrestrial places as sites that demand intervention, with evident colonial logics that work to legitimate expansion and exploitation ([Bawaka Country et al. 2020](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#bib4); [Gorman 2005](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#bib34)). Scholars have recognized the troubling parallels between terrestrial colonialism and state expansion into outer space, in which “both interplanetary space and the lands of ‘primitive’ people are [considered] terra nullius, empty wildernesses, or moral vacuums, into which civilized sea-faring or space-faring nations can bring the right moral order” ([Gorman 2005](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#bib34): 99; see also [Genovese 2017](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#bib31); Kearnes and Van Dooren 2017; [Klinger 2019](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#bib52); [MacDonald 2007](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#bib58); [Rand 2016](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#bib85); [Sage 2008; and Sutch and Roberts 2019](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#bib91)).[2](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#f2) A formative article from the Bawaka Collective makes it clear that expansion into outer space is a direct act of colonization and “the extension of earth-based colonization into space disrupts and colonizes the plural lifeworlds of many Indigenous people who have ongoing connections with and beyond the sky” (Bawaka Country et. al. 2020: 1).[3](https://www.berghahnjournals.com/view/journals/environment-and-society/12/1/ares120113.xml#f3) Colonial logic is globally pervasive, and just as it informs terrestrial place-making, so too does it foundationally inform exploitation in outer space.

### Link – Space debris

#### The management of space debris is rooted in a militarized approach to the future that culminates in the *full-spectrum dominance* of the globe

**Reno 20** (Joshua Ozias Reno, Associate Professor of Anthropology at Binghamton University. PhD from the University of Michigan, “The Wrong Stuff”, chapter 4 of Military Waste: The Unexpected Consequences of Permanent War Readiness Univ of California Press, Feb 4, 2020 Pg. 127-130)DR 19

**Space debris** can be dangerous to orbiting vessels and, as such, it represents an ever-growing hazard to human uses of Earth space. But these objects are hard to track and easy to mistake for something else, even for people who spend all of their time looking up at the night sky. Like space exploration itself, this is a difficult problem to solve, so it is not surprising that **only the most powerful and prominent space agencies imagine they are capable of finding space debris**, let alone clearing it from orbital environments. A core dimension of that power and prominence, moreover, is about having military ambitions that extend beyond the surface of the planet. And, **from the very beginnings**, doing so has meant enrolling amateur or civilian scientists in DoD plans for outer-space.

Historically, **solving space-related challenges has meant getting funds and resources from wealthy and powerful nations**. **With the growth of** a permanent war economy, **such expenditure** is very often **tied** **to** imagined or real military applications. Consequently, the history of space exploration has been and continues to be shaped by tensions and networks between **civilian and military** scientific objectives. But these seemingly opposed **groups** also align and become indistinguishable, especially insofar as they embrace a fascination with developing the latest technology and an unrelenting faith in its ability to solve all problems. This is also known as techno-solutionism. Evgeny Morozov (2013) developed this idea related to utopian appraisals of the internet. His account draws heavily on **Hannah Arendt’s** *On Violence* (1970), a book which openly criticizes **US administrations** that thought they could solve global problems through technically ingenuous forms of death and destruction. Broadly defined, techno-solutionism is faith that technical fixes can solve any problem…even when they are targeting a realm like **outer space**, one that is already saturated with the leftovers of generations of technological problem-solving. According to Gökçe Günel (2019, 129), any technical adjustment is not only about “functionality, effectiveness, or use, but rather the ways in which its materially and conceptually indeterminate existence mobilizes potential towards a technically adjusted future.” In this sense, **technical fixes for space debris are more about extending the possibility of future technical intervention in orbital environments**, rather than, for instance, **encouraging ethical reflection** on whether people should create debris at all.

Space debris is not just any problem, it is **one that originated** **with** and threatens **space science** and, as such, shows the limits of technical solution-making in general. If it is problematic to see space debris as a technical glitch, as noise in an otherwise perfectly rendered human design, that is because such a view can **mislead us** into thinking that all it takes is a little more ingenuity, a bit more mastery, to solve the problem entirely. But, following Virilio (2007), every new technical innovation and improvement brings a new disaster, an unprecedented act of contamination. If **space debris represents inevitable traces** that human artifacts and projects leave behind in the space beyond Earth, then, whatever the future may hold, this problem is unavoidable. If people want to continue to escape their earthly confines, space debris will have to be reckoned with. Space debris is a possibility that haunts all uses of space *tout court*, rather than an incidental by-product of space exploration and travel.

#### There is no impact.

Von Fange **’**17 [Daniel Von Fange is a full stack developer that builds web platforms, with a particular interest in space applications. Kessler Syndrome is Over Hyped. May 21, 2017. braino.org/essays/kessler\_syndrome\_is\_over\_hyped/]

Kessler Syndrome is overhyped. A chorus of online commenters great any news of upcoming low earth orbit satellites with worry that humanity will to lose access to space. I now think they are wrong. What is Kessler Syndrome? Here’s the popular view on Kessler Syndrome. Every once in a while, a piece of junk in space hits a satellite. This single impact destroys the satellite, and breaks off several thousand additional pieces. These new pieces now fly around space looking for other satellites to hit, and so exponentially multiply themselves over time, like a nuclear reaction, until a sphere of man-made debris surrounds the earth, and humanity no longer has access to space nor the benefits of satellites. It is a dark picture. Is Kessler Syndrome likely to happen? I had to stop everything and spend an afternoon doing back-of-the-napkin math to know how big the threat is. To estimate, we need to know where the stuff in space is, how much mass is there, and how long it would take to deorbit. The orbital area around earth can be broken down into four regions. Low LEO - Up to about 400km. Things that orbit here burn up in the earth’s atmosphere quickly - between a few months to two years. The space station operates at the high end of this range. It loses about a kilometer of altitude a month and if not pushed higher every few months, would soon burn up. For all practical purposes, Low LEO doesn’t matter for Kessler Syndrome. If Low LEO was ever full of space junk, we’d just wait a year and a half, and the problem would be over. High LEO - 400km to 2000km. This where most heavy satellites and most space junk orbits. The air is thin enough here that satellites only go down slowly, and they have a much farther distance to fall. It can take 50 years for stuff here to get down. This is where Kessler Syndrome could be an issue. Mid Orbit - GPS satellites and other navigation satellites travel here in lonely, long lives. The volume of space is so huge, and the number of satellites so few, that we don’t need to worry about Kessler here. GEO - If you put a satellite far enough out from earth, the speed that the satellite travels around the earth will match the speed of the surface of the earth rotating under it. From the ground, the satellite will appear to hang motionless. Usually the geostationary orbit is used by big weather satellites and big TV broadcasting satellites. (This apparent motionlessness is why satellite TV dishes can be mounted pointing in a fixed direction. You can find approximate south just by looking around at the dishes in your northern hemisphere neighborhood.) For Kessler purposes, GEO orbit is roughly a ring 384,400 km around. However, all the satellites here are moving the same direction at the same speed - debris doesn’t get free velocity from the speed of the satellites. Also, it’s quite expensive to get a satellite here, and so there aren’t many, only about one satellite per 1000km of the ring. Kessler is not a problem here. How bad could Kessler Syndrome in High LEO be? Let’s imagine a worst case scenario. An evil alien intelligence chops up everything in High LEO, turning it into 1cm cubes of death orbiting at 1000km, spread as evenly across the surface of this sphere as orbital mechanics would allow. Is humanity cut off from space? I’m guessing the world has launched about 10,000 tons of satellites total. For guessing purposes, I’ll assume 2,500 tons of satellites and junk currently in High LEO. If satellites are made of aluminum, with a density of 2.70 g/cm3, then that’s 839,985,870 1cm cubes. A sphere for an orbit of 1,000km has a surface area of 682,752,000 square KM. So there would be one cube of junk per .81 square KM. If a rocket traveled through that, its odds of hitting that cube are tiny - less than 1 in 10,000. So even in the worst case, we don’t lose access to space. Now though you can travel through the debris, you couldn’t keep a satellite alive for long in this orbit of death. Kessler Syndrome at its worst just prevents us from putting satellites in certain orbits. In real life, there’s a lot of factors that make Kessler syndrome even less of a problem than our worst case though experiment. Debris would be spread over a volume of space, not a single orbital surface, making collisions orders of magnitudes less likely. Most impact debris will have a slower orbital velocity than either of its original pieces - this makes it deorbit much sooner. Any collision will create large and small objects. Small objects are much more affected by atmospheric drag and deorbit faster, even in a few months from high LEO. Larger objects can be tracked by earth based radar and avoided. The planned big new constellations are not in High LEO, but in Low LEO for faster communications with the earth. They aren’t an issue for Kessler. Most importantly, all new satellite launches since the 1990’s are required to include a plan to get rid of the satellite at the end of its useful life (usually by deorbiting) So the realistic worst case is that insurance premiums on satellites go up a bit. Given the current trend toward much smaller, cheaper micro satellites, this wouldn’t even have a huge effect. I’m removing Kessler Syndrome from my list of things to worry about.

#### Kessler is so unlikely, we don’t even need to remove debris

**Mosher** **’19** [Dave; September 3rd; Journalist with more than a decade of experience reporting and writing stories about space, science, and technology; Business Insider, “Satellite collisions may trigger a space-junk disaster that could end human access to orbit. Here’s How,” <https://www.usafa.edu/app/uploads/Space_and_Defense_2_3.pdf>; GR]

The Kessler syndrome plays center-stage in the movie "Gravity," in which an accidental space collision endangers a crew aboard a large space station. But Gossner said that type of a runaway space-junk catastrophe is unlikely. "Right now I don't think we're close to that," he said. "I'm not saying we couldn't get there, and I'm not saying we don't need to be smart and manage the problem. But I don't see it ever becoming, anytime soon, an unmanageable problem." There is no current system to remove old satellites or sweep up bits of debris in order to prevent a Kessler event. Instead, space debris is monitored from Earth, and new rules require satellites in low-Earth orbit be deorbited after 25 years so they don't wind up adding more space junk. "Our current plan is to manage the problem and not let it get that far," Gossner said. "I don't think that we're even close to needing to actively remove stuff. There's lots of research being done on that, and maybe some day that will happen, but I think that — at this point, and in my humble opinion — an unnecessary expense." A major part of the effort to prevent a Kessler event is the Space Surveillance Network (SSN). The project, led by the US military, uses 30 different systems around the world to identify, track, and share information about objects in space. Many objects are tracked day and night via a networkof radar observatories around the globe. Optical telescopes on the ground also keep an eye out, but they aren't always run by the government. "The commercial sector is actually putting up lots and lots of telescopes," Gossner said. The government pays for their debris-tracking services. Gossner said one major debris-tracking company is called Exoanalytic. It uses about 150 small telescopes set up around the globe to detect, track, and report space debris to the SSN. Telescopes in space track debris, too. Far less is known about them because they're likely top-secret military satellites. Objects detected by the government and companies get added to a catalog of space debris and checked against the orbits of other known bits of space junk. New orbits are calculated with supercomputers to see if there's a chance of any collisions. Diana McKissock, a flight lead with the US Air Force's 18th Space Control Squadron, helps track space debris for the SSN. She said the surveillance network issues warnings to NASA, satellite companies, and other groups with spacecraft, based on two levels of emergency: basic and advanced. The SSN issues a basic emergency report to the public three days ahead of a 1-in-10,000 chance of a collision. It then provides multiple updates per day until the risk of a collision passes. To qualify for such reporting, a rogue object must come within a certain distance of another object. In low-Earth orbit, that distance must be less than 1 kilometer (0.62 mile); farther out in deep space, where the precision of orbits is less reliable, the distance is less than 5 kilometers (3.1 miles). Advanced emergency reports help satellite providers see possible collisions much more than three days ahead. "In 2017, we provided data for 308,984 events, of which only 655 were emergency-reportable," McKissock told Business Insider in an email. Of those, 579 events were in low-Earth orbit (where it's relatively crowded with satellites).

#### It takes centuries and adaptation solves

Muelhaupt 19 (Ted, Associate Principal Director of the Systems Analysis and Simulation Subdivision (SASS) and Manager of the Center for Orbital and Reentry Debris Studies at The Aerospace Corporation, M.S., B.S. Aerospace and Aeronautical Engineering & Mechanics, University of Minnesota - Twin Cities, Senior Member of the American Institute of Aeronautics and Astronautics, “How Quickly Would It Take For the Kessler Syndrome To Destroy All The Satellites In LEO? And Could You See This Happening From Earth?”, Quora, 2/28/2019, https://www.quora.com/How-quickly-would-it-take-for-the-Kessler-Syndrome-to-destroy-all-the-satellites-in-LEO-And-could-you-see-this-happening-from-Earth)

The dynamics of the Kessler Syndrome are real, and most people studying it agree on the concept: if there is sufficient density of objects and mass, a chain reaction of debris breaking up objects and creating more debris can occur. But the timescale of this process takes decades and centuries. There are many assumptions that go into these models. Though there is still argument about this, many people in the field think that the process is already underway in low earth orbit. But others, including myself, think we can stop it if we take action. This is a slow motion disaster that we can prevent.