## 1

#### The aff asserts \_\_This is the wrong approach—we exist within a “control society,” where power is exercised not through repression, but continuous control-- frame this round as an interrogation of productivity and desire.

Deleuze 92[Gilles Deleuze was a French philosopher who, from the early 1950s until his death in 1995, wrote on philosophy, literature, film, and fine art. His most popular works were the two volumes of Capitalism and Schizophrenia: Anti-Oedipus and A Thousand Plateaus, both co-written with psychoanalyst Félix Guattari, Postscript on the Societies of Control on JSTOR, Winter 1992,The MIT press,https://www.jstor.org/stable/778828?seq=1, 12-11-2021 amrita]

The different internments or spaces of enclosure through which the individual passes are independent variables: each time one is supposed to start from zero, and although a common language for all these places exists, it is analogical. On the other hand, **the different control mechanisms are inseparable variations, forming a system of variable geometry the language of which is numerical** (which doesn’t necessarily mean binary). Enclosures are molds, distinct castings, but controls are a modulation, like a self-deforming cast that will continuously change from one moment to the other, or like a sieve whose mesh will transmute from point to point. This is obvious in the matter of salaries: the factory was a body that contained its internal forces at a level of equilibrium, the highest possible in terms of production, the lowest possible in terms of wages; but **in a society of control, the corporation has replaced the factory, and** the corporation is a spirit, a gas. Of course the factory was already familiar with the system of bonuses, but **the corporation works more deeply to impose a modulation of each salary, in states of perpetual metastability** that operate through challenges, contests, and highly comic group sessions. If the most idiotic television game shows are so successful, it’s because they express the corporate situation with great precision. The factory constituted individuals as a single body to the double advantage of the boss who surveyed each element within the mass and the unions who mobilized a mass resistance; but **the corporation constantly presents the brashest rivalry as a healthy form of emulation, an excellent motivational force that opposes individuals** against one another and runs through each, dividing each within. The modulating principle of “salary according to merit**” has not failed to tempt national education itself**. Indeed, just as the corporation replaces the factory, **perpetual training tends to replace the school, and continuous control to replace the examination, which is the surest way of delivering the school over to the corporation**. In the disciplinary societies one was always starting again (from school to the barracks, from the barracks to the factory), while in the societies of control one is never finished with anything—the corporation, the educational system, the armed services being metastable states coexisting in one and the same modulation, like a universal system of deformation. In The Trial, Kafka, who had already placed himself at the pivotal point between two types of social formation, described the most fearsome of juridical forms. The apparent acquittal of the disciplinary societies (between two incarcerations); and the limitless postponements of the societies of control (in continuous variation) are two very different modes of juridical life, and if our law is hesitant, itself in crisis, it’s because we are leaving one in order to enter into the other. **The disciplinary societies have two poles: the signature that designates the individual, and the number or administrative numeration that indicates his or her position within a mass**. This is because the disciplines never saw any incompatibility between these two, and because at the same time power individualizes and masses together, that is, constitutes those over whom it exercises power into a body and molds the individuality of each member of that body. (Foucault saw the origin of this double charge in the pastoral power of the priest—the flock and each of its animals—but civil power moves in turn and by other means to make itself lay “priest.”) **In the societies of control, on the other hand, what is important** is no **longer either a signature or a number, but a code:** the code is a password, while on the other hand the disciplinary societies are regulated by watchwords (as much from the point of view of integration as from that of resistance). The numerical language of control is made of codes that mark access to information, or reject it. **We no longer find ourselves dealing with the mass/individual pair.** Individuals have become “dividuals,” and masses, samples, data, markets, or “banks.” Perhaps it is money that expresses the distinction between the two societies best, since discipline always referred back to minted money that locks gold in as numerical standard, while control relates to floating rates of exchange, modulated according to a rate established by a set of standard currencies. The old monetary mole is the animal of the spaces of enclosure, but the serpent is that of the societies of control. We have passed from one animal to the other, from the mole to the serpent, in the system under which we live, but also in our manner of living and in our relations with others. The disciplinary man was a discontinuous producer of energy, but the man of control is undulatory, in orbit, in a continuous network. Everywhere surfing has already replaced the older sports. Types of machines are easily matched with each type of society—not that machines are determining, but because they express those social forms capable of generating them and using them. The old societies of sovereignty made use of simple machines—levers, pulleys, clocks; but the recent disciplinary societies equipped themselves with machines involving energy, with the passive danger of entropy and the active danger of sabotage; the societies of control operate with machines of a third type, computers, whose passive danger is jamming and whose active one is piracy and the introduction of viruses. This technological evolution must be, even more profoundly, a mutation of capitalism, an already well-known or familiar mutation that can be summed up as follows: nineteenth-century capitalism is a capitalism of concentration, for production and for property. **It therefore erects the factory as a space of enclosure, the capitalist being the owner of the means of production but also, progressively, the owner of other spaces conceived through analogy** (the worker’s familial house, the school). As for markets, they are conquered sometimes by specialization, sometimes by colonization, sometimes by lowering the costs of production. But**, in the present situation, capitalism is no longer involved in production, which it often relegates to the Third World, even for the complex forms of textiles, metallurgy, or oil production. It’s a capitalism of higher-order production.** It no longer buys raw materials and no longer sells the finished products: it buys the finished products or assembles parts. What it wants to sell is services and what it wants to buy is stocks. **This is no longer a capitalism for production but for the product, which is to say, for being sold or marketed. Thus it is essentially dispersive, and the factory has given way to the corporation.** The family, the school, the army, the factory are **no longer the distinct analogical spaces that converge towards an owner—state or private power—but coded figures—deformable and transformable—of a single corporation that now has only stockholders**. Even art has left the spaces of enclosure in order to enter into the open circuits of the bank. The conquests of the market are made by grabbing control and no longer by disciplinary training, by fixing the exchange rate much more than by lowering costs, by transformation of the product more than by specialization of production. Corruption thereby gains a new power. Marketing has become the center or the “soul” of the corporation. We are taught that corporations have a soul, which is the most terrifying news in the world. The operation of markets is now the instrument of social control and forms the impudent breed of our masters. Control is short-term and of rapid rates of turnover, but also continuous and without limit, while discipline was of long duration, infinite and discontinuous. Man is no longer man enclosed, but man in debt. It is true that capitalism has retained as a constant the extreme poverty of three-quarters of humanity, too poor for debt, too numerous for confinement: control will not only have to deal with erosions of frontiers but with the explosions within shanty towns or ghettos.

#### Distinctions between the private and public sphere do not exist-- the affirmative’s theorization of such is the latest tactic of control society to modulate the enunciation of behavior and subjectivity through fascist mechanisms.

Hardt 98 [Michael Hardt is an American political philosopher and literary theorist. Hardt is best known for his book Empire, which was co-written with Antonio Negri. It has been praised by Slavoj Žižek as the "Communist Manifesto of the 21st Century". He is currently a professor of literature at Duke University, The Global Society of Control on JSTOR, Fall 1998, Discourse Vol. 20, No. 3, Gilles Deleuze: A Reason to Believe in this World, https://www.jstor.org/stable/41389503, 12-14-2021 amrita]

There Is No More Outside The passage from disciplinary society to **the society of control is characterized** first of all **by the collapse of** the walls **that defined** the **institutions. There is progressively less distinction,** in other words, between inside and outside. This is really part of a general change in the way that power marks space in the passage from modernity to postmodernity. Modern sovereignty has always been conceived in terms of a (real or imagined) territory and the relation of that territory to its outside. Early modern social theorists, for example,from Hobbes to Rousseau, understood the civil order as a limited and interior space that is opposed or contrasted to the external order of nature. The bounded space of civil order, its place, is defined by its separation from the external spaces of nature. In an analogous fashion, the theorists of modern psychology understood drives, passions, instincts, and the unconscious metaphorically in spatial terms as an outside within the human mind, a continuation of nature deep within us. Here the sovereignty of the Self rests on a dialectical relation between the natural order of drives and the civil order of reason or consciousness. Finally, modern anthropology's various discourses on primitive societies often function as the outside that defines the bounds of the civil world. **The process of modernization**, then, in all these varied contexts, **is the internalization of the outside,** that is, the civilization of nature. In the postmodern world, **however, this dialectic** between inside and outside, between the civil order and the natural order, **has come to an end**. This is one precise sense in which the contemporary world is postmodern. "Postmodernism," Fredric Jameson tells us, "is what **you have when the modernization process is complete and nature is gone for good**."3 Certainly we continue to have forests and crickets and thunderstorms in our world, and we continue to understand our psyches as driven by natural instincts and passions, but we have no nature in the sense that these forces and phenomena are no longer understood as outside, that is, they are not seen as original and independent of the artifice of the civil order. In a postmodern world all phenomena and forces are artificial, or as some might say, part of history. The modern dialectic of inside and outside **has been replaced by a play of degrees** and intensities, of hybridity **and** artificiality. Secondly, the outside **has also declined in terms of** a rather different modern **dialectic that defined the relation between public and private in liberal political theory**. The **public spaces** of modern society, **which constitute the place of liberal politics, tend to disappear** in the postmodern world. According to the liberal tradition, the modern individual, at home in its private spaces, regards the public as its outside. The outside is the place proper to politics, where the action of the individual is exposed in the presence of others and there seeks recognition. In the process of postmodernization, however, **such public spaces are increasingly becoming privatized**. The urban landscape is shifting from the modern focus on the common square and the public encounter to the closed spaces of malls, freeways, and gated communities. The architecture and urban planning of megalopolises such as Los Angeles and Sao Paulo have tended to limit public access and interaction as well as limited chance encounters of different social subjects, creating rather a series of protected interior and isolated spaces. Alternatively, consider how the banlieu of Paris has become a series of amorphous and indefinite spaces that promote isolation rather than any interaction or communication. **Public space has been privatized to such an extent** that **it no longer makes sense to understand social organization in terms of a dialectic between private and public spaces**, between inside and outside. The **place of modern liberal politics has disappeared** **and thus from this optic our postmodern and imperial society** **is characterized by a deficit of the political**. In effect, the place of politics has been deactualized. In this regard, Guy Debord's analysis of the society of the spectacle, thirty years after its composition, seems ever more apt and urgent.4 In postmodern society the spectacle is a virtual place, or more accurately, a non-place of politics. The **spectacle is at once unified** and diffuse in such a way that **it is impossible to distinguish** any inside from outside - the natural from the social, **the private from the public**. The **liberal notion of the public**, the place outside where we act in the presence of others, **has been** both **universalized** (because we are always now under the gaze of others, monitored by safety cameras) **and sublimated** or de-actualized in the virtual spaces of the spectacle. The end of the outside is the end of liberal politics. Finally, from the perspective of Empire, or rather from that of the contemporary world order, there is no longer an outside **also in a** third sense, a properly **military sense**. When Francis Fukuyama claims that the contemporary historical passage is defined by the end of history, he means that the era of major conflicts has come to an end: in other words, sovereign power will no longer confront its Other, it will no longer face its outside, but rather progressively expand its boundaries to envelop the entire globe as its proper domain.5 The history of imperialist, inter-imperialist, and anti-imperialist wars is over. The end of that history has ushered in the reign of peace. Or really, we have entered the era of minor and internal conflicts. Every imperial war is a civil war, a police action- from Los Angeles and Granada to Mogadishu and Sarajevo. **In fact, the separation of tasks between the external and internal arms of power (between the army and the police, the CIA and the FBI) is increasingly vague and indeterminate.** In our terms the end of history that Fukuyama refers to is the end of the crisis at the center of modernity, the coherent and defining conflict that was the foundation and raison d'etre for modern sovereignty. History has ended precisely and only to the extent that it is conceived in Hegelian terms- as the movement of a dialectic of contradictions, a play of absolute negations and subsumption. The binaries that defined modern conflict have become blurred. The Other that might delimit a sovereign Self has become fractured and indistinct, and there is no longer an outside that can bound the place of sovereignty. At one point in the Cold War, in an exaggerated version of the crisis of modernity, every enemy imaginable (from women's garden clubs and Hollywood films to national liberation movements) could be identified as communist, that is, part of the unified enemy. The outside is what gave the crisis of the modern and imperialist world its coherence. **Today it is increasingly difficult for the ideologues of the United States to name the enemy, or rather there seem to be minor and elusive enemies everywhere.6 The end of the crisis of modernity has given rise to a proliferation of minor and indefinite crises in the imperial society of control, or as we prefer, to an omni-crisis.** It is useful to remember here that the capitalist market is one machine that has always run counter to any division between inside and outside. The capitalist market is thwarted by exclusions and it **thrives by including always increasing numbers within its sphere**. Profit can only be generated through contact, engagement, interchange, and commerce. The realization of the world market would constitute the point of arrival of this tendency. In its ideal form there is no outside to the world market: the entire globe is its domain.7 We might use the form of the world market as a model for understanding the form of imperial sovereignty in its entirety. Perhaps, just as Foucault recognized the panopticon as the diagram of modern power and disciplinary society, the world market might serve adequately (even though it is not an architecture; it is really an anti-architecture) as the diagram of imperial power and the society of control.8 The striated space of modernity constructs places that are continually engaged in and founded on a dialectical play with their outsides**. The space of imperial sovereignty, in contrast, is smooth. It might appear that it is free of the binary divisions of modern boundaries, or striation, but really it is criss-crossed by so many fault lines that it only appears as a continuous, uniform space. In** this sense, the clearly defined crisis of modernity gives way to an omnicrisis in the imperial framework. In this smooth space of empire, there is no place of power- it is both everywhere and nowhere. The empire is an u-topos , or rather a non-place.

#### This may seem innocuous, but it creates a war on difference, a new totalitarian model that is premised upon reactive orientations to desire, leaving only a simulation of political participation creating fascism-- that turns case.

Karatzogianni and Robinson 13. [Athina Karatzogianni is a Senior Lecturer in Media and Communication at the University of Leicester (UK), Andrew Robinson is an independent researcher and writer, “Schizorevolutions vs. Microfascisms: A Deleuzo-Nietzschean Perspective on State, Security, and Active/Reactive Networks,” Selected Works, July 2013, http://works.bepress.com/athina\_ karatzogianni, 8-17-2019, amrita]

Thesis 2: The threatened state transmutes into the terror state. The return of state violence from the kernel of state exceptionalism is a growing problem. It is grounded on a reaction of the terrified state by conceiving the entire situation as it is formerly conceived specific sites of exception and emergency (c.f. Agamben, 1998, 2005). New forms of social control directed against minor deviance or uncontrolled flows are expanding into a war against difference and a systematic denial of the ‘right to have rights’ (Robinson, 2007). The project is not simply an extension of liberal-democratic models of social control, but breaks with such models in directly criminalizing nonconformity from a prescribed way of life and attempting to extensively regulate everyday life through repression. This new repressive model, expressing a kind of neo-totalitarianism, should be taken to include such measures and structures as the rise of gated communities, CCTV, RFID, ID cards, ASBOs, dispersal zones, paramilitary policing methods, the ‘social cleansing’ of groups such as homeless people and street drinkers from public spaces, increasing restrictions on protests and attacks on ‘extremist’ groups, the use of extreme sentencing against minor deviance, and of course the swathe of “anti-terrorism” laws which provide a pretext for expanded repression. This increasingly vicious state response leads to extremely intrusive state measures. The magazine Datacide analyses the wave of repression as ‘the real subsumption of every singularity in the domain of the State. From now on if your attributes don't quite extend to crime, a judge's word suffices to ensure that crime will reach out and embrace your attributes’ (Hyland n.d.). To decompose networks, the state seeks to shadow them ever more closely. The closure of space is an inherent aspect of this project of control. While open space is a necessary enabling good from the standpoint of active desire, it is perceived as a threat by the terrified state, because it is space in which demonised Others can gather and recompose networks outside state control. Hence, for the threatened state, open space is space for the enemy, space of risk. Given that open space is in contrast necessary for difference to function (since otherwise it is excluded as unrepresentable or excessive), the attempts to render all space closed and governable involve a constant war on difference which expands ever more deeply into everyday life. As Guattari aptly argues, neoliberal capitalism tends to construe difference as unwanted ‘noise’ (1996: 137). Society thus becomes a hothouse of constant crackdowns and surveillance, which at best simulates, and at worst creates, a situation where horizontal connections either cannot emerge or are constantly persecuted. Theories such as those of Agamben and Kropotkin show the predisposition of the state to pursue total control. But why is the state pursuing this project now? To understand this, one must recognise the multiple ways in which capitalism can handle difference. Hence, there are two poles the state can pursue, social-democratic (adding axioms) or totalitarian (subtracting axioms), which have the same function in relation to capitalism, but are quite different in other regards. State terror involves the replacement of addition of axioms (inclusion through representation) with subtraction of axioms (repression of difference). This parallels the distinction between ‘hard’ and ‘soft’ power in international relations. Crucially, ‘hard’ power is deflationary (Mann 2005: 83-4). While ideological integration can be increased by intensified command, ‘soft’ power over anyone who remains outside the dominant frame is dissipated. Everyday deviance becomes resistance because of the project of control which attacks it. It also becomes necessarily more insurrectionary, in direct response to the cumulative attempts to stamp it out through micro-regulation. What the state gains in coercive power, it loses in its ability to influence or engage with its other. But the state, operating under intense uncertainty and fear, is giving up trying to seem legitimate across a field of difference. A recent example of this concerns the treatment of whistleblowers: Bradley [Chelsea] Manning and by extent the publisher Julian Assange in the WikiLeaks case (for a discussion of affect see Karatzogianni, 2012) and Edward Snowden in relation to the recent revelations about NSA surveillance program PRISM (Poitras and Greenwald’s video Interview with Edward Snowden, 9 June 2013). This is not to say that it dispenses with articulation. It simply restricts it tautologically to its own ideological space (Negri 2003: 27). Legitimation is replaced by information, technocracy and a simulation of participation (Negri 2003: 90, 111.). There is a peculiarly close relationship between the state logic of command and the field of what is variously termed ‘ideology’ (in Althusser), ‘mythology’ (in Barthes) and ‘fantasy’ (in Lacan): second- order significations embedded in everyday representations, through which a simulated lifeworld is created, in which people live in passivity, creating their real performative connection to their conditions of existence and bringing them into psychological complicity in their own repression. Such phenomena are crucial to the construction of demonised Others which provides the discursive basis for projects of state control. ‘[Conflict is] deflected... through the automatic micro-functioning of ideology through information systems. This is the normal, ‘everyday’ fascism, whose most noticeable feature is how unnoticeable it is’ (Negri 1998a: 190). In denial of generalisable rights, the in-group defines social space for itself and itself alone. The result is a denial of basic dignity and rights to those who fall outside "society", who, in line with their metaphysical status, are to be cast out, locked away, or put beyond a society defined as being for "us and us only" (the mythical division between social and anti-social). The neo-totalitarian state resurrects the tendency to build a state ideology, but this ideology is now disguised as a shared referent of polyarchic parties and nominally free media. Failing to think in statist terms is no longer any different from criminal intent. Romantically crossing an airport barrier for a goodbye kiss is taken as a major crime, for the state, being terrified, responds disproportionately; the romantic is blamed for producing this response (Baker and Robins, 2010). He should have thought like the state to begin with, and not corrupted its functioning with trivialities such as love. Such is the core of the terror-state: constant exertion of energy to ward off constant anxiety, at the cost of a war on difference. Networks under Threat - Network Terror Thesis 3: Networked movements escape the state-form. Thesis 4: State terror targets and terrifies movements. Thesis 5: Movement terror is an outcome of state terror against movements. At the intersection of the threatened state and the sources of its anxiety lies the collapse of marginal integration and ‘addition of axioms’ in neoliberalism. Capitalism has been clenching its fists on the world for some time, and many spaces and people are falling through its fingers. The formal sector of the economy is shrinking, leaving behind it swathes of social life marginalized from capitalist inclusion. Much of the global periphery is in effect being forcibly ‘delinked’ from the world economy as inclusion through patronage is scaled down due to neoliberalism. For instance, ‘Sub-Saharan Africa has almost dropped out of the formal international economy’ (Mann, 2005: 55-6). Religious, militia and informal economic organisations have replaced the state on the ground across swathes of Africa, and ‘whole regions have now become virtually independent, probably for the foreseeable future, of all central control’ (Bayart, Ellis and Hibou, 1999: 19-20). These spaces are the locus of the state’s fear of ‘black holes’ where state power breaks down and insurgents can flourish (Korteweg, 2008; Innes, 2008). On a human scale, exclusion, or ‘forced escape’, is even more noticeable. Arif Dirlik argues that capitalism controls enough resources that it no longer needs to control the majority of people; it can simply ignore and exclude four-fifths of the world (1994: 54-5). William Robinson refers to a new stratum of ‘supernumeraries’ in countries like Haiti, who are completely marginalised from production, useless to capitalism and prone to revolt (1996: 342, 378). This became even more evident with the extreme recent seismic event in January 2010 a paradigmatic failure to save lives. This stratum is another locus of the state’s fears. Such people are in Žižek’s terms the ‘social symptom’ of the current world order, ‘the part which, although inherent to the existing universal order, has no ‘proper place’ within it’ (Žižek, 1999, p. 224). Hence, as Caffentzis puts it, ‘Once again, as at the dawn of capitalism, the physiognomy of the world proletariat is that of the pauper, the vagabond, the criminal, the panhandler, the refugee sweatshop worker, the mercenary, the rioter’ (1992: 321). Viewed in affirmative terms, these excluded sites and peoples are associated with the network form. The last few decades have seen a proliferation of network-based movements -- some emancipatory, others less so -- drawing their membership from marginalised groups and creating autonomous zones in marginal spaces. In the South, such movements often grow out of the everyday networks of survival which ‘provide an infrastructure for the community and a measure of functional autonomy’ (Hecht and Simone, 1994: 14-15; c.f. Lomnitz, 1977; Chatterjee 1993). The discontented excluded lie at the heart of today’s asymmetrical wars. For instance, Giustozzi has investigated the origins of the Pakistani Taleban, revealing that it flourishes mainly among young people who do not receive ‘peace, income, a sense of purpose, a social network’ from the established structure of tribal power (Giustozzi 2007: 39), while Watts (2007) has referred to what is known locally as the ‘restive youth problem’ as central to the conflict in the Niger Delta. One can also refer here to mass protest revolts such as those in Greece and the French banlieues, and spectacular revolts against state power in which police stations and state symbols are attacked, such as the Boko Haram revolt in Nigeria and the uprising of Primero Comando da Capital (PCC) in Sao Paolo. Ignoring for the moment the distinctions among such movements, their vitality can clearly be traced to their networked and marginal loci. Resisting or eluding the terror-state’s grab for space, horizontal networks flow around the state’s restrictions, moving into residual unregulated spaces, gaps in the state’s capacity to repress, across national borders, or into the virtual. Repression drives dissent from open to clandestine forms, creating a field of diffuse resistance and deviance, which ‘returns’ as intractable social problems and inert effects**.**

#### Endorse community-based radical organizing built around collective solidarity—the plan is doomed to failure if it is tied to discussions of how space is bad. Space has the radical potential to be different and you should affirm a subversion of their politic—no perms.

Battaglia 12 [Debbora Battaglia is a professor at Mount Holyoke College. “Arresting hospitality: the case of the 'handshake in space,” The Journal of the Royal Anthropological Institute, Vol. 18, <https://www.jstor.org/stable/41506671>., 12-14-2021 amrita]

Towards an extra-territorial ethics of hospitality While acknowledging that anthropologists of play and ludic limits could have a field day with some of this paper's ethnographic material,26 I have tried to do something more far-reaching here – seeking in the complex exchanges of various natural, techno- cultural, and social force-fields the features of an extra-territorial ethics of hospitality, for shaping possible nature-culture futures on the ground. Circling by degrees around 'handshake' scenarios that are basically all about social relations crafted in small actions of non-sovereignty, I seek to posit the diplomatic strategy of suspending welcome as an emblematic action of denying power claimed in the name of territory (Boden)27: Apollo and Soyuz may have sourced to state structures and geopolitical security concerns, but the project could go beyond these. Denying rights to hosting, authoring, or authorizing hospitality other than mutually (as we saw in the hard fact of androgynous technology and manoeuvres for mutual rescue), astronauts and cosmonauts replaced sovereign claims to space with their own relational code — one in which 'the welcomed guest is treated as a friend or ally, as opposed to the stranger treated as an enemy (friend/enemy, hospitality/hostility)' (Derrida 2000: 4). But the ethnography exceeds Derrida's anthropocentrism. Because both spacecraft and humans are as much of space as in it, we are moved to appreciate the value of cutting 'guest' and 'host' free to engage nature-culture relations. To take up sidelong the point that Agamben (2005) carries forward from Carl Schmitt for defining sovereignty, space-as-itself is here the only possible sovereign power: that to which exceptions to human laws source. It is in this sense that the cosmonauts and astronauts of Apollo-Soyuz were acting both humbly and boldly as 'little gods' who would deny a politics of territory a place of privilege in space or on Earth, even as the nations to which they owed their allegiance committed to this value officially in rhetorics of colonization and/or conquest. It is thus that space creates space for a God concept in the company of which both religious orthodoxies and orthodox science can only be uncomfortable (cf. Derrida 2002). It follows that forms of civility become visible in this instance as protentive actions for laws not only in suspension but in submission to space-as-itself — the extreme testing-ground of laws beyond arbitrage, by which the values of the nominal are not only appreciated but strongly felt, as fieldworking astronauts' and cosmonauts' first-person narratives show. Long-duration space station missions enabled by the techno-logical advances of ASTP will in future lend their micro-spaces more readily to narratives and images of sovereignty, including the sovereignty of property. But not in the spacetime of the welcome withheld. It is because purposeful ruptures of nominal conduct interfere with nature-culture business-as-usual that hospitality can abide there, as it were in the aporia. Beyond being merely tolerated, gifts of disruption within insider space communities seized the moment for ‘worlding’ differently than by fixed rules of engagement. Bruno Latour writes in War of the worlds: what about peace?, ‘Modernism distinguishes itself from its successor—what should it be called? "Second modernity"? ... — in this one small respect: from now on the battle is about the making of the common world and the outcome is uncertain. That's all. And that's enough to change everything’ (2002: 33, emphasis added). Derrida takes this anthropological turn when he speaks of hospitality arising not from 'the love of man as a sentimental motive' — it is not about philanthropy — but (quoting Kant) from 'the right of a stranger not to be treated with hostility when he arrives on someone else's territory'. Hospitality is to be thought of as a universal ‘obligation, a right, and a duty all regulated by law’ (2000: 4).28 And this is more or less precisely stated by the USSR Command Centre spokesperson in a post-flight statement to the world press: The flight was conducted in accordance with an agreement between the Union of Soviet Socialist Republics and the United States of America. This document foresaw the execution of projects for the creation of joint means of motion and docking of the Soviet and American manned spacecraft and stations, with the purpose of increasing the safety of spaceflights and securing the possibility of realizing in the future joint scientific experiments.29

## Case

#### ] Existential risks are categorically different---even if they win that the vast majority of people would die, total collapse is an entirely different ethical category---the infinite range of scenarios for total extinction mean try or die is decisively neg

Baum 15

Seth D. Baum, PhD in geography from Pennsylvania State University, is Executive Director of the Global Catastrophic Risk Institute, “Winter-Safe Deterrence: The Risk of Nuclear Winter and Its Challenge to Deterrence, Contemporary Security Policy, 36(1): 123-14, http://www.tandfonline.com/10.1080/13523260.2015.1012346

Here it is important to bring in the ethics of global catastrophic risk. A global catastrophe is an event that causes great harm to the entirety of global human civilization. Catastrophes of this magnitude take on a special ethical significance. Carl Sagan was perhaps the first to recognize this in his own discussion of nuclear winter. The astronomer saw the big picture: Human extinction means the loss of all people who could ever exist into the distant future. Contemporary scholars further understand that even without total human extinction, a permanent collapse of human civilization is of comparable significance. Ultimately what is at stake is the long-term trajectory of human civilization, its success or its failure. Ethical obligations to future generations are fundamentally different from those to people alive today, for two reasons. First, future generations vastly outnumber the current population. Barring catastrophe, humanity could survive for millions or even billions of years into the future. Thus anything that affects the long-term trajectory of human civilization is of much greater consequence than things that only affect people today. Second, despite their great number, future generations are utterly helpless. They cannot vote in today’s elections or trade in today’s markets, and they certainly cannot deter today’s countries with any weapons. This is absolutely unfair, but that is just how it is. The only reason people must help future generations is because it is the right thing to do. For nuclear winter policy, the basic point is that when a permanent global catastrophe could occur, a cautious approach is generally warranted. This means erring on the side of smaller nuclear arsenals. Any given nuclear weapons exchange has a range of possible outcomes of varying severities and probabilities. A permanent global catastrophe is so severe of an outcome that even a small probability of it happening is a large risk and thus worth avoiding.

#### Asteroid mining is an unqualified good – it’s essential to advanced asteroid deflection, deep space travel,

Heise 18 -- Jack Heise (Judicial Law Clerk at U.S. Courts of Appeals), Space, the Final Frontier of Enterprise: Incentivizing Asteroid Mining Under a Revised International Framework, 40 Mich. J. Int'l L. 189 (2018). https://repository.law.umich.edu/mjil/vol40/iss1/5 WJ

Asteroid mining has the potential to facilitate space travel, an outcome the OST holds to be in the interest of humanity as a whole.39 The potential of asteroid mining to reduce the cost of spaceflight, moreover, could facilitate the growth of the space economy. Asteroid mining thus aligns with another stated purposes of the OST in the sense that an expanded space econ- omy could provide substantial benefits to all mankind.40 First, in seeking to face the challenges posed by space travel, the public sector space race gave rise to numerous technological innovations, ranging from LEDs to emergency blankets to memory foam.41 It seems likely that the private space race would result in a similar degree of innovation, the products of which could benefit people across the globe.

Second, a successful mission to Mars could provide benefits beyond a mere sense of interplanetary accomplishment. NASA suggests that, given the parallels between the formation and evolution of Mars and Earth, a voyage there could help “us learn more about our own planet’s history and future.”42 The scientific advancements from such a mission cannot currently be anticipated and are difficult to predict, but “expand[ing] the frontiers of knowledge” in this manner could well bring benefits to all mankind.43

Third, the development of asteroid mining technology could also help advance asteroid diversion tactics. The development of the technology required to conduct successful asteroid mining operations could “help us to divert any incoming asteroids.”44 This is of great importance since NASA recently eliminated its Asteroid Redirect Mission due to funding cuts;45 NASA’s project was hailed by some scientists as a “critical step in demonstrating we can protect our planet from a future asteroid impact . . . .”46 Asteroid mining could step in and fill an important void. While the probability of an Armageddon-causing impact is low, the effects of an impact would be extremely severe.47 Even some mitigation of this risk as a byproduct of as- teroid mining would be a benefit to humanity as a whole.

Finally, reduced launch costs could facilitate measures to combat global climate change. One proposed solution for canceling out predicted increases in average worldwide temperature is to “prevent[] . . . about 1% of incoming solar radiation—insolation—from reaching the Earth. This could be done by scattering into space from the vicinity of Earth an appropriately small frac- tion of total insolation.”48 Asteroid mining could facilitate such measures in that “[t]echnologies that could greatly decrease the cost of space-launch could make a telling difference in the practicality of all types of space- deployed scattering systems of scales appropriate to insolation modulation.”49 There are certainly intermediate measures to combat climate change that ought to be taken first, but asteroid mining would facilitate this expedited solution. While some of the benefits of asteroid mining would doubtless accrue primarily to those nations with asteroid mining companies within their borders, the benefits noted in this section—space exploration as a gen- eral proposition, technological and scientific development, improvement of asteroid diversion technology, and facilitated means of swiftly countering climate change—would inure substantially to the benefit of all mankind.

#### Mining k2 clim8 change

Duran 21 -- Paloma Duran (Journalist and Industry Analyst), 11/03/2021, Is Space Mining the Best Option to Face Climate Change?, https://mexicobusiness.news/mining/news/space-mining-best-option-face-climate-change WJ

Going to net zero means that more mining is needed. Experts have said that the current supply cannot support the necessary metals demand for the green transition. As a result, new mining alternatives have gained greater relevance, among them is space mining. Several countries, including Mexico, have shown their interest in this alternative, creating a new space race.

“The solar system can support a billion times greater industry than we have on Earth. When you go to vastly larger scales of civilization, beyond the scale that a planet can support, then the types of things that civilization can do are incomprehensible to us … We would be able to promote healthy societies all over the world at the same time that we would be reducing the environmental burden on the Earth,” said Dr. Phil Metzger, Planetary Scientist at the University of Central Florida.

Currently, there are several attempts to address global warming and transition to a net zero carbon economy. There has been an increasing interest in renewable energy and infrastructure, which has increased demand for various minerals, especially lithium, cobalt, nickel, copper and rare earth elements. However, according to experts, the world is close to entering a metals supercycle, where demand will exceed available supply, causing prices to skyrocket.

Consequently, the mining industry has sought alternatives to achieve the required supply. Options include recycling and improved mine waste management, sea mining and space mining. The latter is considered one of the alternatives with the greatest potential. However, a regulatory framework is still lacking and there is almost no experience in this regard.

Despite the lack of knowledge regarding space mining, it has become a very attractive option since the planet is running out of resources. While some people believe that land-based mining is cheaper than space mining, experts believe this may change in the long term. Furthermore, within the solar system there are countless bodies rich in minerals, ores and elements that will accelerate the fight against climate change.

“There will come a point when there is nothing left to mine on the surface, prompting mines to reach even further below. But even those resources are destined to run out and so we will aim toward ocean mining, which already has specific technologies that are being developed. Nevertheless, even those mines are limited as well. The mine of the future, which today may seem unlikely, will no longer be on our planet. There will be a time when space mining will be as common as an open leach mine,” Eder Lugo, Minerals Head at Siemens, told MBN.

More than 150 million asteroids measuring approximately 100m are believed to be in the inner solar system alone. In addition, astronomers have also identified abundant minerals near the Earth’s space and the Main Asteroid Belt. There are three main groups into which asteroids are divided: C- type, S- type, and M- type. The last two groups are the most abundant in minerals such as gold, platinum, cobalt, zinc, tin, lead, indium, silver, copper and rare earth metals.

"Energy is limited here. Within just a few hundred years, you will have to cover all of the landmass of Earth in solar cells. So, what are you going to do? Well, what I think you are going to do is you are going to move out in space … all of our heavy industry will be moved off-planet and Earth will be zoned residential and light-industrial,” said Jeff Bezos, Founder of Amazon and the Space Launch Provider Blue Origin.

#### Public sector space innovation falls continues to fall short. The private sector is key to space research/innovation.

Follett 21 [Andrew Follett- previously space and science reporter for Daily Caller News Foundation, researcher for the Congressional Committee on Science, Space and Technology, the National Aeronautics and Space Administration, the Cato Institute, and the Competitive Enterprise Institute. currently conducts research analysis for nonprofit in Washington, D.C., area.. “Private Firms Are the Key to Space Exploration.” 8/21/21. National Review. https://www.nationalreview.com/2021/08/private-firms-are-the-key-to-space-exploration/]

#### America’s public-sector space program recently had a rough couple of weeks that perfectly exemplify why it desperately needs a free-market overhaul. On July 29, the International Space Station (ISS) suffered a serious loss of control after a Russian spacecraft docked with it, accidentally causing the station to make a full 540-degree rotation and a half before coming to a stop upside down, when the astronauts got it under control. Like most NASA programs, the ISS is massively over budget. Costs were initially projected at $12.2 billion, but the bill ultimately reached a stunning $150 billion. American taxpayers paid around 84 percent of that. What happened to the American dream of human space exploration? Put simply, the government happened. NASA devolved into a jobs program to bring home the space bacon. Then, on August 10, NASA’s inspector general released a report deeming plans to send astronauts back to the moon in 2024 unfeasible because of significant delays in developing the mission’s spacesuits. Right now the suits are being built by 27 different companies that successfully lobbied the government for a piece of the action. SpaceX’s Elon Musk has rightly noted that NASA has “too many cooks in the kitchen.” The difference between NASA’s cumbersome designed-by-committee suits and SpaceX’s suits — created by a single contractor — is remarkable, even to the naked eye. The report unconvincingly blames NASA’s failure to develop a new spacesuit over the last 14 years solely on shifting technical requirements. It recommends “ensuring technical requirements for the next-generation suits are solidified before selecting the acquisition strategy to procure suits for the ISS and Artemis programs.” Instead of dealing with the problem, the Biden administration is trying to distract attention from the space agency’s mismanagement by announcing plans to land the first person of color on the moon . . . even though NASA has been incapable of sending astronauts of any color into space under its own power since July 2011. NASA has been reduced to begging the Russians for a ride. The agency’s troubled Constellation program, meant to replace the Space Shuttle fleet, was canceled after tens of billions of dollars had already been spent. But NASA’s troubles are, depressingly, likely to get even worse. In November the James Webb Space Telescope (JWST) will finally launch, after taxpayers have forked over $9.7 billion. It was originally supposed to launch in 2007 on a budget of $500 million. That means the project is over a decade behind schedule and costing almost 20 times its initial budget. Perhaps the telescope, meant to locate potentially habitable planets around other stars and perhaps even extraterrestrial life, could instead search for a calendar . . . or fiscal sanity . . . in the stars? JWST isn’t the first NASA space telescope to suffer cost overruns and setbacks. The Hubble Space Telescope (HST) was originally intended to launch in 1983, but technical issues delayed the launch until 1990 because the main mirror was incorrectly manufactured. JWST is very likely to fail because it is supposed to unfold itself “origami style” in space in an extremely technically complicated process. If difficulties arise, JWST lacks HST’s generous margin for error because of its location far beyond earth’s orbit at the Sun-Earth L2 LaGrange point. NASA currently lacks the capability to send a team of astronauts out that far to fix any problems. Even if NASA could get out to JWST, the telescope doesn’t have a grappling ring for an astronaut to grab onto and thus could potentially kill astronauts attempting to fix it. It is hard to imagine a better example of the private sector’s amazing ability to outcompete government bureaucracy and mismanagement than NASA’s planned Shuttle replacement, the Space Launch System. It is estimated to cost more than $2 billion per flight. That’s on top of the $20 billion and nine years the agency has already spent developing the vehicle. Contrast that with the comparatively inexpensive $300 million spent by SpaceX to develop the Falcon 9 in a little over four years, and the fact that each Falcon 9 costs around $62 million. One SLS launch could pay for over 32 SpaceX launches. Private ventures such as SpaceX are more efficient because they have a lot more incentive to avoid excessive costs and focus on solutions: Their own money is at stake, and people spend their own money more carefully than they spend taxpayer dollars collected from others. Multiple private American space firms are currently pursuing accomplishments beyond those of NASA, and they are more advanced and ambitious than the entire government space programs of China and the European Union combined. So one possible solution to NASA’s woes would be to greatly increase its reliance on commercial launch providers. And one way to do that would be to return to the system that made civil aviation great: prizes to reward private-sector innovation. Charles Lindbergh flew across the Atlantic Ocean in pursuit of the privately funded Orteig prize, valued at almost $395,000 in today’s money. Another famous example was the X Prize, which rewarded Burt Rutan’s company Scaled Composites with over $14 million in today’s money for becoming the first nongovernmental organization to launch a reusable and manned space vehicle, SpaceShipOne. The X Prize succeeded in creating over $100 million in investment by private corporations and individuals. Aerospace experts expect that establishing a $10 billion prize for successfully landing a crew on Mars and returning it safely to earth could very well lead to a successful landing. That’s a bargain compared with the $500 billion cost estimates NASA puts out for the same objective. And of course in the worst-case failure scenario for a prize program, taxpayers would pay nothing until the mission was complete. A system based on private enterprise incentivized by a fixed prize would end government cost overruns and waste. The cause of space exploration is simply too important to leave to the public sector.

#### Capitalism is self-correcting and sustainable – war and environmental destruction are not profitable and innovation solves their impacts

Kaletsky ’11 (Anatole, editor-at-large of *The Times* of London, where he writes weekly columns on economics, politics, and international relationsand on the governing board of the New York-based Institute for New Economic Theory (INET), a nonprofit created after the 2007-2009 crisis to promote and finance academic research in economics, Capitalism 4.0: The Birth of a New Economy in the Aftermath of Crisis, p. 19-21)

Democratic capitalism is a system built for survival. It has adapted successfully to shocks of every kind, to upheavals in technology and economics, to political revolutions and world wars. Capitalism has been able to do this because, unlike communism or socialism or feudalism, it has an inner dynamic akin to a living thing. It can adapt and refine itself in response to the changing environment. And it will evolve into a new species of the same capitalist genus if that is what it takes to survive. In the panic of 2008—09, many politicians, businesses, and pundits forgot about the astonishing adaptability of the capitalist system. Predictions of global collapse were based on static views of the world that extrapolated a few months of admittedly terrifying financial chaos into the indefinite future. The self-correcting mechanisms that market economies and democratic societies have evolved over several centuries were either forgotten or assumed defunct. The language of biology has been applied to politics and economics, but rarely to the way they interact. Democratic capitalism’s equivalent of the biological survival instinct is a built-in capacity for solving social problems and meeting material needs. This capacity stems from the principle of competition, which drives both democratic politics and capitalist markets. Because market forces generally reward the creation of wealth rather than its destruction, they direct the independent efforts and ambitions of millions of individuals toward satisfying material demands, even if these demands sometimes create unwelcome by-products. Because voters generally reward politicians for making their lives better and safer, rather than worse and more dangerous, democratic competition directs political institutions toward solving rather than aggravating society’s problems, even if these solutions sometimes create new problems of their own. Political competition is slower and less decisive than market competition, so its self-stabilizing qualities play out over decades or even generations, not months or years. But regardless of the difference in timescale, capitalism and democracy have one crucial feature in common: Both are mechanisms that encourage individuals to channel their creativity, efforts, and competitive spirit into finding solutions for material and social problems. And in the long run, these mechanisms work very well. If we consider democratic capitalism as a successful problem-solving machine, the implications of this view are very relevant to the 2007-09 economic crisis, but diametrically opposed to the conventional wisdom that prevailed in its aftermath. Governments all over the world were ridiculed for trying to resolve a crisis caused by too much borrowing by borrowing even more. Alan Greenspan was accused of trying to delay an inevitable "day of reckoning” by creating ever-bigger financial bubbles. Regulators were attacked for letting half-dead, “zombie” banks stagger on instead of putting them to death. But these charges missed the point of what the democratic capitalist system is designed to achieve. In a capitalist democracy whose raison d’etre is to devise new solutions to long-standing social and material demands, a problem postponed is effectively a problem solved. To be more exact, a problem whose solution can be deferred long enough is a problem that is likely to be solved in ways

#### Private sector mining is coming now – new tech and precious resources create concrete incentives.

Davenport 20 Davenport, Christian. [Reporter covering NASA and the space industry, Education: Colby College, B.A., American Studies]“A Dollar Can't Buy You a Cup of Coffee but That's What NASA Intends to Pay for Some Moon Rocks.” *The Washington Post*, WP Company, 3 Dec. 2020, https://www.washingtonpost.com/technology/2020/12/03/moon-mining-contracts-named/. //Debatedrills AS

NASA announced Thursday that several companies had won contracts to mine the moon and turn over small samples to the space agency for a small fee. In one case, a company called Lunar Outpost bid $1 for the work, a price NASA jumped at after deciding the Colorado-based robotics firm had the technical ability to deliver.

“You’d be surprised at what a dollar can buy you in space,” Mike Gold, NASA’s acting associate administrator for international and interagency relations, said in a call with reporters.

But the modest financial incentives are not the [driver of the program](https://www.washingtonpost.com/technology/2020/09/10/moon-mining-nasa-search/?itid=lk_inline_manual_6). Nor to a large extent is the actual lunar soil. NASA is asking for only small amounts — between 50 and 500 grams (or 1.8 ounces to about 18 ounces). While there would be scientific benefits to the mission, it’s really a technology development program, allowing companies to practice extracting resources from the lunar surface and then selling them.

It would also establish a legal precedent that would pave the way for companies to mine celestial bodies in an effort blessed by the U.S. government to help build a sustainable presence on the moon and elsewhere.

To do that, NASA says it needs its astronauts, like the western pioneers, to “live off the land,” using the resources in space instead of hauling them from Earth. The moon, for example, has plenty of water in the form of ice. That’s not only key to sustaining human life, but the hydrogen and oxygen in water could also be used as rocket fuel, making the moon a potential gas station in space that could help explorers reach farther into the solar system.

Asteroids also have significant resources, particularly precious metals that could be used for in-space manufacturing. While the prospect of large mining and manufacturing facilities in orbit is still many years away, NASA wants to use the mining program as a small step toward that goal.

NASA is now trying to return astronauts to the moon under its Artemis program for the first time since 1972. Unlike its predecessor, Apollo, where the astronauts visited the lunar surface for a short while before coming home, the Artemis program would create a permanent presence on and around the moon.

“The ability to extract and utilize space resources is the key to achieving this objective of sustainability,” Gold said. “We must learn to generate our own water, air and even fuel. Living off the land will enable ambitious exploration activities that will result in awe-inspiring science and unprecedented discoveries.”

In 2015, then-President Barack Obama signed a law that allowed private companies the right to own the resources they mined in space. Under the program announced Thursday, NASA said the materials would be transferred from the private companies to NASA.

The effort would not violate the 1967 Outer Space Treaty, NASA officials have said, which prohibits nations from claiming sovereignty over a celestial body. NASA Administrator Jim Bridenstine previously likened the policy to the rules governing the seas.

**“We do believe we can extract and utilize the resources of the moon, just as we can extract and utilize tuna from the ocean,” he said earlier this year.**

As part of its lunar exploration mission, NASA has been working to get countries around the world to adopt what it calls the Artemis Accords, a legal framework that would govern behavior in space and on celestial bodies such as the moon.

### 3 impacts

#### Warming causes extinction

Yangyang Xu 17, Assistant Professor of Atmospheric Sciences at Texas A&M University; and Veerabhadran Ramanathan, Distinguished Professor of Atmospheric and Climate Sciences at the Scripps Institution of Oceanography, University of California, San Diego, 9/26/17, “Well below 2 °C: Mitigation strategies for avoiding dangerous to catastrophic climate changes,” Proceedings of the National Academy of Sciences of the United States of America, Vol. 114, No. 39, p. 10315-10323

We are proposing the following extension to the DAI risk categorization: warming greater than 1.5 °C as “dangerous”; warming greater than 3 °C as “catastrophic?”; and warming in excess of 5 °C as “unknown??,” with the understanding that changes of this magnitude, not experienced in the last 20+ million years, pose existential threats to a majority of the population. The question mark denotes the subjective nature of our deduction and the fact that catastrophe can strike at even lower warming levels. The justifications for the proposed extension to risk categorization are given below.

From the IPCC burning embers diagram and from the language of the Paris Agreement, we infer that the DAI begins at warming greater than 1.5 °C. Our criteria for extending the risk category beyond DAI include the potential risks of climate change to the physical climate system, the ecosystem, human health, and species extinction. Let us first consider the category of catastrophic (3 to 5 °C warming). The first major concern is the issue of tipping points. Several studies (48, 49) have concluded that 3 to 5 °C global warming is likely to be the threshold for tipping points such as the collapse of the western Antarctic ice sheet, shutdown of deep water circulation in the North Atlantic, dieback of Amazon rainforests as well as boreal forests, and collapse of the West African monsoon, among others. While natural scientists refer to these as abrupt and irreversible climate changes, economists refer to them as catastrophic events (49).

Warming of such magnitudes also has catastrophic human health effects. Many recent studies (50, 51) have focused on the direct influence of extreme events such as heat waves on public health by evaluating exposure to heat stress and hyperthermia. It has been estimated that the likelihood of extreme events (defined as 3-sigma events), including heat waves, has increased 10-fold in the recent decades (52). Human beings are extremely sensitive to heat stress. For example, the 2013 European heat wave led to about 70,000 premature mortalities (53). The major finding of a recent study (51) is that, currently, about 13.6% of land area with a population of 30.6% is exposed to deadly heat. The authors of that study defined deadly heat as exceeding a threshold of temperature as well as humidity. The thresholds were determined from numerous heat wave events and data for mortalities attributed to heat waves. According to this study, a 2 °C warming would double the land area subject to deadly heat and expose 48% of the population. A 4 °C warming by 2100 would subject 47% of the land area and almost 74% of the world population to deadly heat, which could pose existential risks to humans and mammals alike unless massive adaptation measures are implemented, such as providing air conditioning to the entire population or a massive relocation of most of the population to safer climates.

Climate risks can vary markedly depending on the socioeconomic status and culture of the population, and so we must take up the question of “dangerous to whom?” (54). Our discussion in this study is focused more on people and not on the ecosystem, and even with this limited scope, there are multitudes of categories of people. We will focus on the poorest 3 billion people living mostly in tropical rural areas, who are still relying on 18th-century technologies for meeting basic needs such as cooking and heating. Their contribution to CO2 pollution is roughly 5% compared with the 50% contribution by the wealthiest 1 billion (55). This bottom 3 billion population comprises mostly subsistent farmers, whose livelihood will be severely impacted, if not destroyed, with a one- to five-year megadrought, heat waves, or heavy floods; for those among the bottom 3 billion of the world’s population who are living in coastal areas, a 1- to 2-m rise in sea level (likely with a warming in excess of 3 °C) poses existential threat if they do not relocate or migrate. It has been estimated that several hundred million people would be subject to famine with warming in excess of 4 °C (54). However, there has essentially been no discussion on warming beyond 5 °C.

Climate change-induced species extinction is one major concern with warming of such large magnitudes (>5 °C). The current rate of loss of species is ∼1,000-fold the historical rate, due largely to habitat destruction. At this rate, about 25% of species are in danger of extinction in the coming decades (56). Global warming of 6 °C or more (accompanied by increase in ocean acidity due to increased CO2) can act as a major force multiplier and expose as much as 90% of species to the dangers of extinction (57).

The bodily harms combined with climate change-forced species destruction, biodiversity loss, and threats to water and food security, as summarized recently (58), motivated us to categorize warming beyond 5 °C as unknown??, implying the possibility of existential threats. Fig. 2 displays these three risk categorizations (vertical dashed lines).

#### NEOs can and will kill us all – ignore defense that confuses uncertainty with improbability – uncertainty in assessments means you should assign it a higher risk

Boslough 19 -- Mark Boslough (University of New Mexico), “Chapter 13 Uncertainty and Risk at the Catastrophe Threshold”, 2019, Planetary Defense, Space and Society, https://dl1.cuni.cz/pluginfile.php/634091/mod\_resource/content/1/Planetary%20Defence.pdf

The planetary defense community came to a similar conclusion. The NEO population is analogous the numbers of rounds in the revolvers of our pretend laboratory experiment. But the expected consequences of an impact depend on the size of the asteroid. The largest asteroids have the greatest effect—including the possibility of extinction—but the quantification of consequence is also very uncertain. We simply do not know how big an asteroid must be to cause an ecological collapse, to destroy agricultural production and end civilization, or to wipe out the human race. This calculation is not possible because we do not understand all the damage mechanisms associated with an Earth system that is complex and nonlinear. The asteroid that erased the dinosaurs altered the Earth forever, first by direct impact effects—the generation of an enormous crater and expulsion of ejecta. About 100 million megatons of energy was released in a massive explosion that changed the atmosphere, heating it up by an unknown amount. The air became opaque with dust and debris, leading to an impact winter that lasted years. The composition and radiative properties of the atmosphere were forever altered, and the climate changed. The precise mechanism for the resulting mass extinction is still debated and is unlikely to ever be completely understood. Fortunately, impacts by 10-km asteroids occur only once every 100 million years or so. The current risk is zero, because a 10-km asteroid on a collision course would be large enough to have been discovered already. The same cannot be said for long-period comets, however, the frequency of large comets entering the inner Solar System is low. A 5-km asteroid almost certainly exceeds the global catastrophe threshold, but at half the diameter of the dinosaur killer. An asteroid’s mass governs its impact energy and damage potential, so mass is a better measure of “size” for purposes of consequence estimates. A 5-km asteroid is therefore really only an eighth as big as the dinosaur killer, and its impact would deliver about one-eighth the destructive energy (for a given impact velocity). But there are more of the smaller ones, so the Earth is exposed to more frequent impacts from them (once about every 30 million years). The Earth doesn’t experience mass extinctions with that high of a frequency, so it is unlikely that 5-km asteroids exceed the extinction threshold, at least not every time they hit. But if one were to hit the Earth today, the energy released (roughly 10 million megatons) and the amount of debris produced would lead to certain global catastrophe, killing billions of people. The population of asteroids continues to increase as the size (and consequences) go down. Like the “bullets-in-guns” thought experiment, space is a shooting gallery where most of the shots are relatively harmless, but rare ones are catastrophic. There are sound arguments based on physics and backed by evidence in the geological record that more frequent and smaller impacts can have local, regional, or even continental-scale consequences without causing a major climate disruption or global catastrophe. That suggests the existence of an unknown size threshold for global catastrophe. There is no reason to think that such a threshold even corresponds to a definite size. An impact into one spot might release a large quantity of planet-warming greenhouse gases or cause soot-producing firestorms, resulting in an impact winter. On the other hand, if it landed in a deep ocean basin, there might be little if any global consequences. The threshold for catastrophe is therefore fuzzy in addition to being uncertain. 13.6 Avoiding Catastrophe by Situational Awareness Chapman and Morrison (1994) published the first comprehensive probabilistic risk assessment for asteroids and comets. They used observations of the effects of nuclear weapons along with physics-based scaling laws to estimate the direct damage caused by an impact of a given size. However, such scaling laws only work well for impacts that are too small to cause indirect global environmental effects such as climate change. They argued that above some threshold size (which they estimated to be around 1.5 km in diameter, with large uncertainty) a comet or asteroid impact would create a global catastrophe that would kill at least a quarter of the world’s population, increasing all the way up to extinction for the largest impacts. They spliced the nuclear weapons-based estimates together with the global catastrophe estimates to create a single, but crude “kill curve” that related the number of deaths to the size of an impacting body. In our Russian Roulette illustration, our three different guns were loaded with three different integer numbers of live rounds (since bullets exist as discrete units). This is a discrete math problem with three different possible consequences, each with its own probability. For the planetary defense risk assessment, the size of the comet or asteroid is a continuous parameter, so the sum becomes an integral. We can solve it by integrating the kill curve (as a function of size) times the probability of an impact of that size, over all possible sizes. In practice, this is done by dividing the curves up into discrete size bins. One can construct a table consisting of the number of expected impacts within some size range in a specified interval of time, and the number of resulting fatalities (averaged over all possible scenarios). According to Chapman and Morrison (1994), the expected long-term number of impact fatalities per year is 3000 if the threshold asteroid diameter for a globally catastrophic impact is 1.5 km (for further discussion of the threshold for global impact effects, see (Toon et al. 1997)). If our ability to simulate the consequences of an impact were perfect, we could improve on these estimates by running a statistically significant number of computer experiments and determining how many people would be killed, on average, from an impact of a given size. We could simulate random impacts in numbers proportional to the size distribution of the asteroid population, add up the numbers of fatalities, and divide by the number of impacts to generate a better kill curve. Unfortunately, our ability to simulate impact consequences is still far from perfect. The estimates for ocean impacts are particularly uncertain because the efficiency of impact tsunami generation is not well understood. The severity of climate-changing global catastrophes from asteroid impacts are even more uncertain because climate is a nonlinear dynamic system with unknown thresholds and feedbacks. With increased uncertainty comes greater assessed risk. Most of the uncertainty is associated with impact consequences and the “kill curve”. Complex geophysical simulations will never be perfect, therefore decisions will always need to be made in the face of this uncertainty. Nevertheless, such calculations are the best way to ensure that such decisions are objective. The estimated risk of a few thousand fatalities per year is counterintuitive, because there are no examples of unambiguous, confirmed asteroid fatalities. It depends on low-probability, high consequence events—something that only happens every million years or so but could kill hundred million people. The odds of such an event taking place in a given year are only about one in a million, but it would contribute 100 fatalities per year to the total. The expected number of fatalities per year is zero, but the long-term average is much greater. This is not the only possible way to quantify risk, and may not even be the best, yet it has become the de facto metric for the impact risk assessments, for intercomparison of contributing factors, and for performing sensitivity studies in support of cost/benefit analyses for various risk-reduction strategies. As an example, the Chapman and Morrison (1994) analysis led to an obvious policy recommendation: catastrophe avoidance. This is analogous to removing the single live round from the gun that is pointed at your head in the Russian Roulette example. The optimal risk reduction method is to prevent large impacts. The first step toward avoidance of catastrophic impact is to find all the asteroids in Earthcrossing orbits that are above the global catastrophe threshold. This recommendation led to the establishment of a survey program and the 1998 NASA directive to discover 90% of NEOs greater than 1 km in diameter. This was also the easiest solution, because there are only about 1,000 NEOs of that size. Since they are also the biggest and brightest in the sky, they were the easiest to find. The survey was a success and led to a large reduction in assessed risk. Using astronomical NEO surveys to eliminate catastrophic risk is based on the same philosophy as looking both ways before crossing the street. The survey is an act of situational awareness that doesn’t by itself change the probability of impact. An object in a deterministic orbit will either collide with the Earth on some specified time interval or it won’t. Its intrinsic impact probability is either zero or one. The situational awareness provided by looking creates the opportunity to take preventive action to mitigate the risk if something is discovered to be on a collision course. A pedestrian can change his or her own course by waiting until a potentially hazardous vehicle passes. For planetary defense, the preventive option of choice is asteroid deflection. But without a survey to discover the threat, that option is not available.

#### Delaying space colonization by even a second is worth 100 trillion lives -- most conservative estimate

Bostrom 3 -- Nick Bostrom (Needs no further introduction), Astronomical Waste: The Opportunity Cost of Delayed Technological Development, Utilitas Vol. 15, No. 3 (2003): pp. 308-314, https://www.nickbostrom.com/astronomical/waste.html WJ

As I write these words, suns are illuminating and heating empty rooms, unused energy is being flushed down black holes, and our great common endowment of negentropy is being irreversibly degraded into entropy on a cosmic scale. These are resources that an advanced civilization could have used to create value-structures, such as sentient beings living worthwhile lives.

The rate of this loss boggles the mind. One recent paper speculates, using loose theoretical considerations based on the rate of increase of entropy, that the loss of potential human lives in our own galactic supercluster is at least ~10^46 per century of delayed colonization.[1] This estimate assumes that all the lost entropy could have been used for productive purposes, although no currently known technological mechanisms are even remotely capable of doing that. Since the estimate is meant to be a lower bound, this radically unconservative assumption is undesirable.

We can, however, get a lower bound more straightforwardly by simply counting the number or stars in our galactic supercluster and multiplying this number with the amount of computing power that the resources of each star could be used to generate using technologies for whose feasibility a strong case has already been made. We can then divide this total with the estimated amount of computing power needed to simulate one human life.

As a rough approximation, let us say the Virgo Supercluster contains 10^13 stars. One estimate of the computing power extractable from a star and with an associated planet-sized computational structure, using advanced molecular nanotechnology[2], is 10^42 operations per second.[3] A typical estimate of the human brain’s processing power is roughly 10^17 operations per second or less.[4] Not much more seems to be needed to simulate the relevant parts of the environment in sufficient detail to enable the simulated minds to have experiences indistinguishable from typical current human experiences.[5] Given these estimates, it follows that the potential for approximately 10^38 human lives is lost every century that colonization of our local supercluster is delayed; or equivalently, about 10^29 potential human lives per second.

While this estimate is conservative in that it assumes only computational mechanisms whose implementation has been at least outlined in the literature, it is useful to have an even more conservative estimate that does not assume a non-biological instantiation of the potential persons. Suppose that about 10^10 biological humans could be sustained around an average star. Then the Virgo Supercluster could contain 10^23 biological humans. This corresponds to a loss of potential equal to about 10^14 potential human lives per second of delayed colonization.

What matters for present purposes is not the exact numbers but the fact that they are huge. Even with the most conservative estimate, assuming a biological implementation of all persons, the potential for one hundred trillion potential human beings is lost for every second of postponement of colonization of our supercluster.[6]