## **Framing**

#### **I value social inequality – social inequality is defined as disproportionate access to essential resources and opportunities that affect a person’s well- being.**

#### **My value criteria is that the judge should vote for a policy or action that best mitigates social inequality.**

#### **Reasons to prefer:**

#### **Most Practical Method: Debates about competitive policy options that mitigate or resolve social inequality compel in depth research practices and strategies that best analyze and concurrently resolve the question of how to mitigate social inequality. Leads to in depth debates on the ethicality and political implications of the resolution.**

#### **Moral Responsibility: Comparative policy analysis is the only way debaters can fulfill their responsibility to address social inequality since our negligence and frequent tendency to overlook social inequality is what allows inequality to continuously reproduce.**

#### **Reject any framework that only requires the negative to win the aff is bad without providing an alternative. These frameworks allow us to avoid responsibility in remedying social inequity.**

#### **Research Praxis: Social inequality persist both because of a lack of awareness and resolve. Research and analytical practices endemic to competitive policy -oriented debate on combating social inequity shapes and compels ethical subjects who utilize their research and analytical skills outside of debate.**

#### **Social inequality creates a feeling of exclusion, political disempowerment, and enables authoritarianism – all of which damage wellbeing for the marginalized. Human well-being exceeds any metric for weighing impacts that is grounded in neo classical economics.**

**Peterson Institute for International Economics 20** (The Peterson Institute for International Economics (PIIE) is an independent nonprofit, nonpartisan research organization dedicated to strengthening prosperity and human welfare in the global economy through expert analysis and practical policy solutions., “How to Fix Economic Inequality? An Overview of Policies for the United States and Other High-Income Economies” 2020 Page 16 and 17 <https://www.piie.com/sites/default/files/documents/how-to-fix-economic-inequality.pdf>)

**Social and economic inequalities, for example inequalities of wealth and authority, are just only if they result in compensating benefits for everyone, and in particular for the least advantaged members of society.** John Rawls, A Theory of Justice (1971) There are opposing views on whether economic inequality needs to be narrowed, ranging from economic to political to philosophical. **The most obvious case for combating inequality rests on the notion of fairness—that everyone should have an equal chance at attaining prosperity.** On the other side of the argument, some influential economists have long held that there is a tradeoff between equality and growth—that greater inequality may be an inevitable outcome of higher output, but this point of view is hotly contested. Some social scientists think that inequality may be acceptable if people are also lifted out of poverty (regardless if others are becoming superrich). Others defend inequality as an inevitable result of differences in talent and the important role of free choices by individuals. They argue that excessive focus on inequality is misplaced. Here are some counterpoints and alternative ways of thinking about it. It matters who is treated unequally and why Discussions about solutions must take into account those people still excluded from economic security because of their race, gender, ethnicity, or place of birth, argues Adam S. Posen (PIIE). Inequality on the basis of discrimination is arguably worse as well as differently addressed than economic equality per se. By the same token, high wealth or income which doesn’t come from unfair advantages may not be bad in and of itself, even if that inequality should be reduced in pursuit of other goals. Inequality may hurt a country’s economy. Recent studies find evidence that inequality hampers a country’s growth, and this view is gaining ground among policymakers. Jason Furman (PIIE) warns that it is difficult to generalize about the causal relationship between inequality and growth but that policymakers don’t need to choose, because they can pursue well-known “win-win” options, **such as improving primary education**. **People at the bottom lack power and opportunities to get ahead. Economic growth metrics cannot by themselves measure human wellbeing, explains Danielle Allen (Harvard University). People must feel included and empowered in society. In an economy with high levels of inequality, people at the bottom lack options to gain wealth or participate in the political system. Inequality is undemocratic**. Thomas M. (Tim) **Scanlon (Harvard University) argues that inequality must be addressed when it results in unfair discrimination by democratic institutions—for example, when benefits like education and health care are available unequally, when opportunities for advancement are limited, or when citizens are subjected to racism, sexism, or shameful treatment for being poor.** **Authoritarians exploit inequality for political gain. Experts have linked rising inequality to the wave of populism and authoritarianism across the world—when governments exploit economic anxiety by appealing to “ordinary people” in opposition to “elites” who are accused of discriminating in favor of foreigners, immigrants, or minorities in the workforce**

#### **Prioritizing other impacts over social inequality ideologically justifies self-evaluation processes congruent with the disproportionate distribution of society’s resources. When evaluating impacts, De valuing structural inequality’s significance confirms the self-view that a favorable social position is justified based on objective superiority. We must reject therefore reject impact evaluations that confirm the legitimacy of privileged positions.**

**Stolte 83** (John F. Stolte, Adjunct Professor University of Texas MD Anderson School of Health Professions Professor Emeritus Northern Illinois University P.H.D. in Sociology at University of Washington June 1983 " The Legitimation of Structural Inequality: Reformulation and Test of the Self-Evaluation Argument" American Sociological Review , Jun., 1983, Vol. 48, No. 3"THE LEGITIMATION OF STRUCTURAL INEQUALITY: REFORMULATION AND TEST OF THE SELF EVALUATION ARGUMENT\*" <https://www-jstor-org.libproxy2.usc.edu/stable/pdf/2095226.pdf?refreqid=excelsior%3A6688370106fdb605957cbc72d593fa30>)

Different in many ways, Marx's radical conflict theory (1886), Mosca's elite conflict theory (1939), and Parsons's functional theory (1949) are similar in one respect. Each describes an important process in stratification: **structural inequality is ideologically justified so as to "allocate feelings of potency, competence, and, above all, importance and self-worth in a manner congruent with (the distribution of) primary resources" (power, wealth, and pres- tige**) (Della Fave, 1980:959). Della Fave amplifies this insight, synthesizing ideas from Mead's (1934) theory of the self-concept and Bem's (1967) theory of self-perception. According to Mead, objectivity of self-view is promoted by seeing oneself from the per- spective of the "generalized other," a compos- ite conception of attitudes and expectations held in general by others toward the self. Mead used the economic marketplace to illustrate the impact of the "generalized other" on the self- concept (Reck, 1964). A person learns the "objective" value of an economic good through observing the price others regularly pay for it. Similarly, a person gets a sense of self-worth through the reflected appraisals, high or low, received generally across a career of symbolic interactions. 'Mead's theory is compatible with Bem's (1967) self-perception approach, subsumed as a special case within attribution theory (Kelley, 1967). A person looks at his/her own behavior as something to explain. S/he makes judgments about (attributions of) causes, in a manner taken to be reasonable with reference to an external, objective observer, thus achieving an explanation. **Della Fave argues that the "ex- ternal observer" of attribution theory is closely analogous to "the generalized other" of sym- bolic interaction theory.2 Considered in the context of structural in- equality, the two theories link self-evaluation and legitimation. If it is evident to a person that s/he occupies a favorable social position, s/he will develop a favorable self-evaluation. The evident facts of the situation and the positive reflected appraisals confirm that self-view. To an objective observer ("the generalized other"), it would seem reasonable to attribute the advantaged position to the "objective" superiority of the self in competence, in morality, etc. The person thus comes to be- lieve that s/he deserves to-occupy a privileged position.** Conversely, if it is apparent to a per- son that s/he occupies a disadvantaged social position s/he will develop an unfavorable self- evaluation. The negative reflected appraisals and the obvious facts of the situation lead the person to attribute his/her relative deprivation to the "objective" inferiority of the self. Con- sequently, the person will come to believe that s/he deserves to be located where s/he is lo- cated in the structure of inequality. Both ad- vantaged and disadvantaged actors will there- fore come to accept the structure of inequality as legitimate, right, and reasonable.

## **Advantage**

#### **In the context of outer space, Appropriation encompasses private property rights obtained through private use and occupation**

**Simmons 16** (Thomas E. Simmons, Assistant Professor, University of South Dakota School of Law, 2016 "DEPLOYING THE COMMON LAW TO QUASI-MARXIST PROPERTY ON MARS")

I will turn first to the question of the initial acquisition of private property rights on the Martian surface by the first settlement organization to arrive on Mars. In this context, **the difficulties presented by Article II’s ban on appropriation of celestial bodies’ realty “by any means” must be considered in view of the means by which property rights might be acquired and recognized absent a prior appropriation by the United States.**60 **Then, assuming that acquisition of some form of property rights can be obtained through private use and occupation** without violating OST’s ban on national appropriation, I will consider the nature of property rights which can be acquired by a second settlement organization on Mars in view of Article I’s “common use” provision.61 Framing a reasonable interpretation of Articles I and II depends on an examination of conduct and customs of the United States and Soviet Union under the treaty, as well as on a brief explication of the socialist property principles that seem to haunt the OST.

#### **“Unjust” means characterized by injustice and unfair**

**Meriam Webster** (Meriam-Webster <https://www.merriam-webster.com/dictionary/unjust>

Definition of unjust

1: **characterized by injustice : UNFAIR**

2archaic : DISHONEST, FAITHLESS

#### **As of the status quo, there is a frontier paradigm that informs policy recommendations about outer space. The general assumption is that private entities will successfully discover, develop, and appropriate outer space to generate a surplus of capital. Most members of society are socially biased towards the privatization of space because we are taught to believe that capitalism is sustainable and inevitable and that whatever mistakes private companies made here on Earth will not be replicated in space.**

**Shammas and Holen 19** (Victor L. Shammas & Tomas B. Holen, “One giant leap for capitalistkind: private enterprise in outer space,” Article number: 10 (2019) <https://www.nature.com/articles/s41599-019-0218-9>)

The spatial fix of outer space

No longer terra nullius, space is now the new terra firma of capitalistkind: its naturalized terroir, its next necessary terrain. The logic of capitalism dictates that capital should seek to expand outwards into the vastness of space, a point recognized by a recent ethnography of NewSpace actors (Valentine, 2016, p. 1050). **The operations of capitalist kind serve to resolve a series of (potential) crises of capitalism, revolving around the slow, steady decline of spatial fixes** (see e.g., Harvey, 1985, p. 51–66) as they come crashing up against the quickly vanishing blank spaces remaining on earthly maps and declining (terrestrial) opportunities for profitable investment of surplus capital (Dickens and Ormrod, 2007a, p. 49–78). **A ‘spatial fix' involves the geographic modulation of capital accumulation, consisting in the outward expansion of capital onto new geographic terrains, or into new spaces, with the aim of filling a gap in the home terrains of capital**. Jessop (2006, p. 149) notes that **spatial fixes may involve a number of strategies, including the creation of new markets within the capitalist world, engaging in trade with non-capitalist economies, and exporting surplus capital to undeveloped or underdeveloped regions**. The first two address the problem of insufficient demand and the latter option creates a productive (or valorizing) outlet for excess capital. **Capitalism must regularly discover, develop, and appropriate such new spaces because of its inherent tendency to generate surplus capital, i.e., capital bereft of profitable purpose.** In Harvey’s (2006, p. xviii) terms, a spatial fix revolves around ‘geographical expansions and restructuring…as a temporary solution to crises understood…in terms of the overaccumulation of capital'. **It is a temporary solution because these newly appropriated spaces will in turn become exhausted of profitable potential and are likely to produce their own stocks of surplus capital;** while **‘capital surpluses that otherwise stood to be devalued, could be absorbed through geographical expansions and spatio-temporal displacements'** (Harvey, 2006, p. xviii), this outwards drive of capitalism is inherently limitless: there is no end point or final destination for capitalism. Instead, **capitalism must continuously propel itself onwards in search of pristine sites of renewed capital accumulation.** In this way, Harvey writes, **society constantly ‘creates fresh productive powers elsewhere to absorb its overaccumulated capital'** (Harvey, 1981, p. 8). **Historically, spatial fixes have played an important role in conserving the capitalist system.** As Jessop (2006, p. 149) points out, ‘The export of surplus money capital, surplus commodities, and/or surplus labour-power outside the space(s) where they originate enabled capital to avoid, at least for a period, the threat of devaluation'. But these new spaces for capital are not necessarily limited to physical terrains, as with colonial expansion in the nineteenth century; as Greene and Joseph (2015) note, various digital spaces, such as the Internet, can also be considered as spatial fixes: the Web absorbs overaccumulated capital, heightens consumption of virtual and physical goods, and makes inexpensive, flexible sources of labor available to employers. Greene and Joseph offer the example of online high-speed frequency trading as a digital spatial fix that furthers the ‘annihilation of space by time' first noted by Marx in his Grundrisse (see Marx, 1973, p. 524). Outer space serves at least two purposes in this regard. In the short-to medium-term, it allows for the export of surplus capital into emerging industries, such as satellite imaging and communication. These are significant sites of capital accumulation: global revenues in the worldwide satellite market in 2016 amounted to $260 billion (SIA, 2017, p. 4). Clearly, much of this activity is taking place ‘on the ground'; it is occurring in the ‘terrestrial economy'. But all that capital would have to find some other meaningful or productive outlet were it not for the expansion of capital into space. Second, outer space serves as an arena of technological innovation, which feeds back into the terrestrial economy, helping to avert crisis by pushing capital out of technological stagnation and innovation shortfalls. In short, outer space serves as a spatial fix. It swallows up surplus capital, promising to deliver valuable resources, technological innovations, and communication services to capitalists back on Earth. This places outer space on the same level as traditional colonization, analyzed in Hegel’s Philosophy of Right, which Hegel thought of as a product of the ‘inner dialectic of civil society', which drives the market to ‘push beyond its own limits and seek markets, and so its necessary means of subsistence, in other lands which are either deficient in the goods it has overproduced, or else generally backward in creative industry, etc.' (Hegel, 2008, p. 222). In this regard, SpaceX and related ventures are not so very different from maritime colonialists and the trader-exploiters of the British East India Company. But there is something new at stake. As the Silicon Valley entrepreneur Peter Diamandis has gleefully noted: ‘There are twenty-trillion-dollar checks up there, waiting to be cashed!' (Seaney and Glendenning, 2016). **Capitalistkind consists in the naturalization of capitalist consciousness and practice, the (false) universalization of a particular mode of political economy as inherent to the human condition, followed by the projection of this naturalized universality into space—capitalist humanity as a Fukuyamite ‘end of history', the end-point of (earthly) historical unfolding,** but the starting point of humanity’s first serious advances in space. What role, then, for the state? The frontiersmen of NewSpace tend to think of themselves as libertarians, pioneers beyond the domain of state bureaucracy (see Nelson and Block, 2018). ‘The government should leave the design work and ownership of the product to the private sector', the author of a 2017 report, Capitalism in Space, advocates. ‘**The private companies know best how to build their own products to maximize performance while lowering cost'** (Zimmerman, 2017, p. 27). One ethnographer notes that ‘politically, right-libertarianism prevails' amongst NewSpace entrepreneurs (Valentine, 2016, p. 1047–1048). Just as Donald Rumsfeld dismissed the opponents to the Iraq War as ‘Old Europe', so too are state entities’ interests in space exploration shrugged off as symptoms of ‘Old Space'. Elon Musk, we are told in a recent biography, unlike the sluggish Big State actors of yore, ‘would apply some of the start-up techniques he’d learned in Silicon Valley to run SpaceX lean and fast…As a private company, SpaceX would also avoid the waste and cost overruns associated with government contractors' (Vance, 2015, p. 114). **This libertarianism-in-space has found a willing chorus of academic supporters. The legal scholar Virgiliu Pop introduces the notion of the frontier paradigm (combining laissez-faire economics, market competition, and an individualist ethic) into the domain of space law, claiming that this paradigm has ‘proven its worth on our planet' and will ‘most likely…do so in the extraterrestrial realms' as well** (Pop, 2009, p. vi). This frontier paradigm is not entirely new: a ‘Columbus mythology', centering on the ‘noble explorer', was continuously evoked in the United States during the Cold War space race (Dickens and Ormrod, 2016, pp. 79, 162–164). But the entrepreneurial libertarianism of capitalistkind is undermined by the reliance of the entire NewSpace complex on extensive support from the state, ‘a public-private financing model underpinning long-shot start-ups' that in the case of Musk’s three main companies (SpaceX, SolarCity Corp., and Tesla) has been underpinned by $4.9 billion dollars in government subsidies (Hirsch, 2015). In the nascent field of space tourism, Cohen (2017) argues that what began as an almost entirely private venture quickly ground to a halt in the face of insurmountable technical and financial obstacles, only solved by piggybacking on large state-run projects, such as selling trips to the International Space Station, against the objections of NASA scientists. The business model of NewSpace depends on the taxpayer’s dollar while making pretensions to individual self-reliance. The vast majority of present-day clients of private aerospace corporations are government clients, usually military in origin. Furthermore, the bulk of rocket launches in the United States take place on government property, usually operated by the US Air Force or NASA.Footnote13 This inward tension between state dependency and capitalist autonomy is itself a product of neoliberalism’s contradictory demand for a minimal, “slim” state, while simultaneously (and in fact) relying on a state reengineered and retooled for the purposes of capital accumulation (Wacquant, 2012). As Lazzarato writes, ‘To be able to be “laissez-faire”, it is necessary to intervene a great deal' (2017, p. 7). Space libertarianism is libertarian in name only: behind every NewSpace venture looms a thick web of government spending programs, regulatory agencies, public infrastructure, and universities bolstered by research grants from the state. SpaceX would not exist were it not for state-sponsored contracts of satellite launches. Similarly, in 2018, the US Defense Advanced Research Projects Agency (DARPA)—the famed origin of the World Wide Web—announced that it would launch a ‘responsive launch competition', meaning essentially the reuse of launch vehicles, representing an attempt by the state to ‘harness growing commercial capabilities' and place them in the service of the state’s interest in ensuring ‘national security' (Foust, 2018b). This libertarianism has been steadily growing in the nexus between Silicon Valley, Stanford University, Wall Street, and the Washington political establishment, which tend to place a high value on Randian ‘objectivism' and participate in a long American intellectual heritage of individualistic ‘bootstrapping' and (allegedly) gritty self-reliance. But as Nelson and Block (2018, p. 189–197) recognize, one of the central symbolic operations of capitalistkind resides in concealing its reliance on the state by mobilizing the charm of its entrepreneurial constituents and the spectacle of space. There is a case to be made for the idea that SpaceX and its ilk resemble semi-private corporations like the British East India Company. The latter, “incorporated by royal charter from Her Majesty Queen Elizabeth I in 1600 to trade in silk and spices, and other profitable Indian commodities,” recruited soldiers and built a ‘commercial business [that] quickly became a business of conquest' (Tharoor, 2017). SpaceX, too, is increasingly imbricated with an attempt on the part of a particular state, the United States, to colonize and appropriate resources derived from a particular area, that of outer space; it, too, depends on the infrastructure, contracts, and regulatory environment that thus far only a state seems able to provide. Its private character, like that of the East India Company, is troubled by being deeply embedded in the state. As one commentator has observed of SpaceX, ‘If there’s a consistent charge against Elon Musk and his high-flying companies…it’s that they’re not really examples of independent, innovative market capitalism. Rather, they’re government contractors, dependent on taxpayer money to stay afloat' (cit. Nelson and Block, 2018, p. 189). Perhaps this should not come as a surprise. As Bourdieu (2005, p. 12) observed, ‘The economic field is, more than any other, inhabited by the state, which contributes at every moment to its existence and persistence, and also to the structure of the relations of force that characterize it'. The state lays out the preconditions for market exchanges. **Under neoliberalism, the state is the preeminent facilitator of markets. The neoliberal state is not so much a Minimalstaat, night watchman state, or slim state as it is the prima causa of market society** (see, e.g., Wacquant, 2012). Similarly, in the political theory of Deleuze and Guattari, any economic development presupposes the political differentiation caused by the state (Deleuze and Guattari, 2004a, p. 237–238). **Even in the global environment of contemporary capitalism, the market cannot operate without the state becoming integrated with capitalism itself, as ‘it is the modern state that gives capitalism its models of realization'** (Deleuze and Guattari, 2004b, p. 480). **For capitalism to survive in outer space, the state must create a regulatory environment, subsidize infrastructure, and hand down contracts – in short, assemble outer space as a domain made accessible in legal, technical, and economic ways.**

#### **Private appropriation of celestial resources in outer space will reproduce greed, corruption, violence, and social inequality.**

**Johnson 20** (Matthew Johnson Doctor of Philosophy Faculty of Arts & Social Sciences University of Technology Sydney 2020 "Mining the high frontier: sovereignty, property and humankind’s common heritage in outer space," Page 249 -251 https://opus.lib.uts.edu.au/bitstream/10453/142380/2/02whole.pdf)

“The aim of all utopias, to a greater or lesser extent, is to eliminate real people. Even if it is not a conscious aim, it is an inevitable result of their good intentions. In a utopia real people cannot exist, for the very obvious reason that real people are what constitute the world that we know, and it is that world that every utopia is designed to replace” (Carey 1999, p.xii). For many of us, it is tempting to treat outer space as though it offered human civilisations a clean slate – an escape from the worst parts of our history. Members of the NewSpace network have claimed that the colonisation of the Solar System holds much promise for human progress and growth, for political reinvention and experimentation (e.g. O’Neill 1977; Zubrin 1994; ASD 2019, p.3; NSS 2019**). The uniqueness of celestial bodies as a site of politics and culture seems to lead to a sense of ‘space exceptionalism’ within NewSpace, a utopian millenarianism in which the unscrupulousness of human behaviours on the frontier can be swept under the rug.** **There is an inherent assumption that off-world societies would inevitably function better than those on Earth, that exploiting and settling a new frontier would somehow negate the capacity for greed, apathy, corruption and violence that plagues our terrestrial existence** – indeed, that real people were actually capable of thriving (not just surviving) outside the protective borders of their home planet. Space law itself reflects this dichotomy between Earthly political discord and aspirational off-world harmony, such that achieving consensus on space resources law has thus far been difficult to achieve. While the exploitation and settlement of the celestial frontier would represent a new chapter in the history of politics, economics and law, I have argued that exploring historical precedent is more useful if we are to speculate on how human spacefaring futures might transpire. Indeed, in the pre-emptive enclosure of the off-world commons, we can see an intermingling of several phases in the genealogy of international law: the mineral sovereign extending powers of lawful appropriation onto the colonial frontier; multilateral declarations of human solidarity, as embodied in the United Nations; and the extra-parliamentary fortification of corporate rights under neoliberal constitutionalism (Purdy 2014; Schneiderman 2013), in which state power is captured to attack multilateral legal agreements and – in this case – establish a legal order amenable to private resource appropriations on the next colonial frontier. If ‘going in peace for the benefit of all humankind’ is to be more thanan evocative phrasing of cosmopolitan aspiration, we need to appreciate the threat that the CSLCA poses to the prospect of egalitarian and inclusive futures in space. **It is particularly important, then, to look past NewSpace claims that private ownership rights will be inherently beneficial, and to instead consider the elective affinities between NewSpace and neoliberalism** (discussed in Chapter 1). While the network is perhaps too diffuse to reduce to a singular ideology, the ideological threads in NewSpace discourse are predominantly on the liberal economic spectrum (Valentine 2012, p.1047-48). Centre-right views highlight the bureaucratic inefficiency of NASA and short-termism of national space policy, while a more pugilistic anarcho-capitalist thread portrays any governmental oversight of space commerce as authoritarian (e.g. Orphans of Apollo 2008). However, there is also a very clear neoliberal component within NewSpace discourses of ‘freedom’ (e.g. Tumlinson 2012; ASD 2016), and these goals of economic liberty have been realised in US space policy. There is now a revised role for NASA and the US state, including to support, fund and purchase from space corporations, while lowering national and international legal barriers that stand in their way (e.g. NASA Act of 1958, s.102, as amended under the NASA Authorization Act of 1985; Presidential Directive on Space Policy 1988; CSLCA 2015, s.51302; Executive Office of the President 2020). **The neoliberal “international economic order” (Bandow 1985) has produced a staggering degree of socioeconomic inequality since the revolutions of the Thatcher and Reagan governments. In the US, for example, the top income decile’s share in national income had risen to 45-50% by 2000-2010** (Piketty 2014, p.24). **If the colonisation of the Solar System proceeds on neoliberal terms, we should expect that a share in any economic benefits from the off-world will be limited to all but an elite few.** Beyond the ideological and programmatic affinities between NewSpace and neoliberalism and their similar policy goals of commodification and privatisation, my research has found signs of confluence between NewSpace and the Atlas Network. **The NewSpace network and the space property law it has lobbied for cannot be reduced to the exclusive work of Atlas neoliberals**. For one, there is support for commercialising space exploration from think-tanks outside of the Atlas Network, such as the Center for New American Security (Zimmerman, in Shammas & Holen 2019, p.6). Peck (2013) also emphasises that neoliberalisation is a process that is uneven and incomplete: this much is true for both NewSpace and NASA.116 **While NewSpace civil society and start-up culture is predicated on harnessing the state to provide commercial incentive for space settlement, other organisations interested in space exploration or colonisation may push space policy back towards a Keynesian or social democratic focus.** Further sociological research into the broader constellation of ‘space enthusiast’ organisations could explore the contemporary extent of alternative political economic ideologies within the movement to settle outer space. This could identify ‘minority positions’ that contrast with my efforts to tease out linkages with Atlas neoliberalism, while also building on prior research into the prevailing liberal economics that have guided NewSpace in the post-Apollo years of space exploration (Dickens and Ormrod 2007; Parker 2009; Valentine 2012; Shammas and Holen 2019).

#### **Absent a centralized mechanism for demarcating property, private entities will assert “first possession rules,” which would further socio-economic inequality between developed nations and undeveloped nations that are not yet space-capable.**

**Babcock 19** (Hope M. Babcock, Professor of Law, Georgetown University Law Center. She thanks Georgetown for its generous support of her scholarship through the issuance of a summer writing grant,"The Public Trust Doctrine, Outer Space, and the Global Commons: Time to Call Home ET," 2019 261 – 262 Syracuse Law Review, Vol. 69, No. 2, 2019. <https://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=3219&context=facpub>)

2. The Rule of First Possession

The “most extreme proposal” with respect to implementing a property regime in outer space is to apply “first possession rules.”283 Under these rules, a country could claim territory it discovered, and then decide whether “to open up settlement in its new territory to its own citizens or to the international community as a whole.”284 Within its own territory, the discovering nation’s sovereignty “would extend to its outer space territory, where it could govern as it pleased.”285 Such an approach would directly conflict with international space law forbidding countries from appropriating outer space or its resources.286 MacWhorter also worries that a first possession rule in space could devolve into “a space race and colonialism in a situation that requires limitation and prudence,” and would be difficult to sell to other nations, especially non-space faring ones.287 **If the rules were applied to commercial enterprises, without a “centralized mechanism for demarcating the property”288—such as a sovereign289—the inevitable result would be disputes among putative property owners, like what happened in the West during the homesteading era.**290 Reinstein agrees: “If the rule of ownership was no more than ‘first come, first served,’ with ownership going to the first person to grab a celestial body, an unmitigated land-rush would ensue.”291 But MacWhorter also believes that limited property rights under a first possession rule might be an “appropriate first step,” if, for example, the property claim extended no further than to the claimed materials brought back to Earth.292 Those who are concerned that less technically adept nations would be severely disadvantaged by a property rights regime that is premised “on the ‘right of [first] grab,’ the first-come, first-served theory of property acquisition,” oppose such an approach.293 “**By the time spaceincapable nations develop the technological prowess and capital reserves to fund meaningful development of outer space, the earlier space-faring nations [and their citizens], left unchecked, might already have locked up the most accessible and valuable resources.”**294 This would carry forward current disparities in global wealth distribution into the “Space Age.”295 **The argument against a right of first possession gains salience from the fact that prior wrongs inflicted on less developed countries may be the reason they are not “space-capable.”296 This inequitable situation would persist, as those who profit from private property rules like the right of first possession will have the political ties, money, and understanding of the “rules of the game” to prevent their reform.297** An additional problem with the proposal is its enforceability. The fact that outer space is infinite makes it more difficult to “police” and to enforce the various treaties that apply to it.298 In outer space, “a breaching private party could pursue its interests outside the scope of such an agreement with relative impunity before it was discovered by the relevant international authority.”2

**Thus I affirm Resolved: The appropriation of outer space by private entities is unjust**

**States can resolve the inequality created by private appropriation of celestial resources.**

#### **First, States can modify the Public Trust Doctrine to allow the application of property management tools. Strong state management mitigates destruction and overconsumption of celestial resources as well monopolization and competition practices that create inequality.**

**Babcock 19** (Hope M. Babcock, Professor of Law, Georgetown University Law Center. She thanks Georgetown for its generous support of her scholarship through the issuance of a summer writing grant,"The Public Trust Doctrine, Outer Space, and the Global Commons: Time to Call Home ET," 2019 261 – 262 Syracuse Law Review, Vol. 69, No. 2, 2019. <https://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=3219&context=facpub>)

CONCLUSION

“Only a legal system that accommodates both the human need for resources and the necessary preservation of mankind’s common heritage can fulfill these criteria.”534 The future is now with regard to the development of outer space and its resources—it is no longer a question of whether humans will engage in these activities, but how soon they will. Technically advanced countries and private commercial enterprises are probing outer space and preparing for landing on an asteroid or the moon to extract their resources.535 Speculators are selling deeds to the moon’s surface and preparing to exploit the tourism potential that space offers.536 But, the legal framework for managing these initiatives is almost nonexistent.537 International treaties came into being before all this activity began in earnest and national laws that might apply are stunted by jurisdictional quandaries like the absence of national boundaries in outer space.538 Thus, **there is an urgency to figure out how to control what happens in outer space before its resources are irreparably damaged or permanently monopolized by powerful countries and individuals.** In the absence of regulation, much of the current debate centers on what property regime should be applied in outer space.539 The assumption is that by only allowing private property rights in space, countries and commercial enterprises will undertake the risks and costs of space development.540 However, unless international space law changes, it may prevent this from happening. If it changes, **strong management controls will be necessary to prevent destruction or over-consumption of celestial resources, as well as monopolization and competitive behavior by participants, which could lead to hostilities and inequities**. This Article examines various private property regimes, including those of less than full fee ownership, to see if any would avoid the conflict with the international prohibition on appropriation of outer space and its resources. It concludes that none will because each retains the right to exclude and each is insensitive to the treaties’ equity concerns. In contrast, considering outer space to be common is consistent with international space law in both respects. Hypothesizing that private property in outer space may yet prevail, this Article investigates different private property management approaches, such as the right of first possession, lotteries, and tradable development rights, to see if any would be cost effective, easy to implement and equitable, and would also prevent over-consumption, monopolization or the slide into rivalrous behavior. The Article concludes that each comes up short in some respect. Social norms as a management tool for property held in common, although compliant with international law, are also not up to the task. Instead, although ancient, the PTD, with its malleability, easy and cost-effective implementation and enforcement, non-consumption principle, and consistency with the goals that animate international space treaties, seems best suited to the task of protecting the public’s interests in the global commons that is outer space as it has done for centuries in Earth-bound commons. But, as its principal terrestrial use has been to protect trust resources from development, the doctrine needs some modification to encourage development of celestial resources. Hence, this Article suggests that **modifying the PTD to allow the application of private property management tools, like tradable development rights, will not only allow development, but also will assure that when it happens, it will not be just profitable for a few, but will also be sustainable and equitable.**

#### **Second, State recognition and protection of outer space as a Public Commons resists the privatization of resources that would lead to the tragedy of the commons**

**Babcock 19** (Hope M. Babcock, Professor of Law, Georgetown University Law Center. She thanks Georgetown for its generous support of her scholarship through the issuance of a summer writing grant,"The Public Trust Doctrine, Outer Space, and the Global Commons: Time to Call Home ET," 2019 235 – 242 Syracuse Law Review, Vol. 69, No. 2, 2019. <https://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=3219&context=facpub>)

2. Common Property

Common property is property, the rights to which belong to more than one entity.356 Like private property, common property is endemic to life in the United States and always has been, even though many Americans view it ambivalently.357 **There is considerable overlap between property held in common and that which is privately owned.** Carol Rose suggests that collective, but privately owned property, like a tenancy in common, “has all the hallmarks of individual private property,” and, therefore, should not be seen as “fundamentally problematic or prone to inefficient use.”358 Additionally, the plasticity of the commons, demonstrated by the appearance of new commons, like the “knowledge commons, cultural commons, infrastructure commons, and neighborhood commons,” indicates that the concept might fit in outer space.359 **A commons, or CPR, is frequently asserted to resist “privatization and/or commodification of those resources,” making it oppositional to a claim that something is private property**.360 Sheila Foster and Christian **Iaione’s suggestion that the “language of the ‘commons’” is often used to prevent the enclosure of public urban space “by economic elites,” resonates with the situation in outer space where wealthy countries or private companies want to claim or enclose space that the public owns**.361 **A claim that something is a commons acknowledges that “it is a shared resource that belongs to all of its inhabitants,”362 like outer space, which is the “province of all mankind.”363** But there are problems with the idea of declaring anything a commons, just like there are problems with declaring something private property. One problem with the commons approach is the inability to exclude members of the commons from using the resource.364 Lacking the right to exclude, a user of CPRs has no incentive to do anything other than fully exploit the commons because if she refrains, her co-users will.365 The result is an “open access resource vulnerable to the tragic conditions of rivalry, overexploitation, and degradation.”366 Another problem is that since under a commons property regime the rights and interests of the present generation dominate those of future generations, there is no assurance that the claims of an unidentified future generation will have any effect on how the commons is managed.367 There are also management difficulties.368 “Under a communal system, one member wishing to preserve the CPR for future generations’ use faces significant—and perhaps insurmountable—transaction costs of negotiating with all members of the community and paying them to use the resource suboptimally.”369 And, exiting a commons when group action causes individual harm, without destroying “social gains from cooperation,” can be difficult.370 There is no one-size-fits-all solution to these problems, and there may be multiple approaches to the development of solutions.371 In the search for solutions, various legal scholars have promoted variations on the concept of a commons, highlighting different features.372 Pearl proposes something he labels the “vital commons,” which includes CPRs that are “essential to human existence,” like air or water, and which may require a different approach to their management.373 Pearl’s vital commons has five key traits: (1) the benefits of the CPR are internalized by nearly all members of a given massive population; (2) the costs of the CPR’s depletion are externalized among nearly all members of that same massive population; (3) augmentation or depletion of the CPR by one party affects the ability to use the CPR by another party within the same massive population; (4) the CPR itself is necessary for sustenance; and 5) damage or depletion of the CPR is non-remediable or extremely difficult to correct.374 Outer space has most of these traits—the potentially affected population is the entire globe; its resources, as far as is known, are not renewable; and the benefits and costs of development of outer space resources could be widely internalized or externalized.375 Additionally, restoration of any depleted resources in outer space may be difficult, and the impact on any of those resources may be so dire that its overuse and depletion could be “the epitome of apocalypse.”376 Finally, the vastness of outer space makes it difficult to subject it to “local” regulation—i.e., regulation by individual nations, which might opt not to regulate certain activities or to regulate lightly.377 Similar to Garrett Hardin’s open pasture, a major problem with a commons is that, “absent a system that allocates use rights, it is difficult, if not impossible, to restrain the impulse of users to pursue their individual self-interests, even when pursuit of those interests result in the degradation or exhaustion of the resource.”378 This is why, he argued, **“‘freedom in the commons’—i.e., the lack of controls on individual behavior and self-interest—ultimately leads to its ruin and hence to the ‘tragedy**.’”379 If the amount of use of a CPR or the intensity of that use is too much, then the result can be “congestion” that decreases the values of those resources.380 “Similarly, certain types of uses can create incompatibilities with many ordinary uses and conservation of such spaces, creating the conditions for rivalry or subtractability.”381 The unbounded nature of space and the variety and wealth of its resources is already attracting potential users with competing or conflicting ideas about how space should be used.382 Even if space was regulated, this “magnetic pull” to occupy and develop space may create rivalry among different users, especially if those users are drawn to the same areas of outer space.383 **Unless the development of outer space resources is regulated, too many entities vying for the same resource could lead not only to congestion and rivalous behavior,384 but also to accidents and serious conflict—the conditions the space treaties are intended to avoid.385 The way to prevent a tragedy on land held in common is not necessarily its transformation to private property,** which is one solution Hardin called for.386 Oran Young says “[i]nstitutional innovation,” like individual transferable quotas, “can create a form of private property and, in the process, alleviate the perverse incentives arising from the condition of non-excludability.”387 **Creating public property or, in the alternative, using regulatory controls can also avoid the tragedy to the commons.388 The owners of a commons can also self-regulate to control the adverse effects of non-excludability.389** But as Young notes, while each approach has its plus side, each approach, like privatization, can also have negative effects.390 “**Privatization can lead to outcomes that are grossly unfair[, and] [g]overnments [may] lack both the capacity and the will to manage public property well.”**391 And common property approaches can lead to nonsustainable use of the property, and “work best in situations where the sense of community is strong and social pressure is capable of controlling behavior effectively”—characteristics uncommon in outer space.392 So, we have learned thus far that (1) the race is on to extract valuable resources from outer space and celestial bodies;393 (2) the international legal framework governing those activities is far from complete, inviting behavior that may be in the economic best interests of the actor, but not necessarily of the globe;394 (3) the international legal principles governing this behavior may be counter-productive when it comes to incentivizing economic behavior, but beneficial non-spacefaring countries;395 and (4) the push to privatize space, which is clearly a global commons, may lead to rivalrous behavior, which could dissolve into military activity and squeeze out poorer countries from the benefits of space, in direct contradiction of the goals of international space law.396 We have also learned that while privatizing open access areas, like outer space, is not necessarily good or necessary to avoid the tragedy of the commons (the over-utilization of common or shared pool resources), the features of a commons make it difficult to avoid that tragedy and to provide for future generations.397 **So the solution may lie in crafting new property regimes, perhaps combining the best features of both approaches. It is to that task this Article now turns—the circumstances in which new forms of property might emerge and what they might be.**

**Two terminal impacts: Social Inequality and Climate Change**

#### **Appropriation undercuts cooperation- reinforces space as a competitive environment**

**Manning, 21** -- senior fellow with the Scowcroft Center for Strategy and Security

[Robert A. Manning, opinion contributor, “The dangers of anarchy in space,” The Hill, 11-29-21, <https://thehill.com/opinion/583317-rethinking-space-the-dangers-of-anarchy-in-the-cosmos>]

I can’t think of a more dramatic illustration of how reckless actions in space put all at **grave risk** than [Russia’s recent anti-satellite (ASAT)](https://www.washingtonpost.com/politics/2021/11/23/russia-proved-it-can-shoot-down-satellite-does-this-make-space-less-secure/) test blowing up one of its own defunct satellites and creating a cloud of more than 1,500 pieces of space debris. All this reflects a troubling anarchy in the cosmos, a militarization of space, one ill-conceived aspect of unrestrained arms racing, the pathology of this era of great power competition. Space junk is inadvertent, but satellites that can kill or disable satellites and cyber jamming highlight the military risks. The anti-space antics also reveal the mutual vulnerabilities that should spark a rethink of current policies in the interest of self-preservation. The private sector has entered the space business with new technologies enabling the miniaturization of satellites, called Cubesats, some no bigger than a shoebox. [Google, Amazon and Elon Musk’s SpaceX](https://www.cnbc.com/2019/12/14/spacex-oneweb-and-amazon-to-launch-thousands-more-satellites-in-2020s.html) plan to launch some 50,000 such satellites in this decade. These are all at risk from [27,000 pieces of space debris](https://www.nasa.gov/mission_pages/station/news/orbital_debris.html), tracked by the Department of Defense’s impressive Space Surveillance Network (SSN), as well as by some half a million smaller pieces, the size of marbles. With both satellites and debris traveling at roughly 17,000 miles an hour, collisions could be catastrophic. Yet there is a paucity of rules governing behavior in space, which, like sea, air and cyber, are global commons. The 1967 Outer Space Treaty (OST) is the one accord signed by all major space-faring nations, 197 nations in all. They agreed to the principles in the OST, which says: “Exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means. and shall be the province of all mankind.” In the real world, the treaty is sadly outdated by both technology (as ASAT tests demonstrate) and geopolitics, as the U.S., Russia and China plan Moon bases and private sector firms plan to exploit minerals on asteroids, for starters. In this era of populist nationalism and major powers **competing for dominance**, fashioning new regimes or codes of conduct for space appears highly problematic. But there are arenas of strategic competition and arenas for cooperation. Some would argue for cooperating only with democracies or like-minded actors. There are some areas – like technology sharing – where this makes sense. But nations cooperate, pooling risks and burdens when they perceive that their interests intersect. The threat of space debris to all nations’ vital economic and national security assets in space would seem one such instance. DOD's space surveillance network is the premier mechanism for monitoring space junk. Russia has some orbital monitoring capacity, but few other states do. Moreover, the U.S. already has [space sharing agreements](https://www.stratcom.mil/Media/News/News-Article-View/Article/1825882/100th-space-sharing-agreement-signed-romania-space-agency-joins/) with over 100 nations to provide data and notifications to avoid collisions. The U.S. gave a heads-up to China about such risks during the Obama administration, according to well-placed sources. In addition, private sector firms and start-ups in Japan and Europe are exploring ways of getting rid of space junk. There is money to be made, and I’d hazard a guess that the engineers at [Jeff Bezos](https://thehill.com/people/jeffrey-jeff-bezos)’s Blue Origin and [Elon Musk](https://thehill.com/people/elon-musk)’s Space X might be interested in a public-private partnership6. It would be faster and cheaper if the space-faring states, pooling resources, invited private sector bids for contracts to help rid the lower Earth orbit of dangerous space junk. Share the burden and the benefits.

#### **That shreds the potential for sustainable space development**

**Islam 18** [Mohammad Saiful Islam – Institute for Advanced Judicial Studies, Beijing Institute of Technology; International, “The Sustainable Use of Outer Space: Complications and Legal Challenges to the Peaceful Uses and Benefit of Humankind,” Beijing Law Review, 06-2018, <https://www.scirp.org/journal/paperinformation.aspx?paperid=85201>]

The current situation of use of outer space is so **competitive** to the public and private sectors as well to attain potential benefits in the economic and political field. This aspect indicates that the importance and complexity of space use are increasing to national security and in social, economic and environmental development. From the one side, the increasing of space faring nations, use of outer space by public and private sectors, from the other side, the use of outer space through effective means, environmentally sound as well as use for commercial purposes is a new great challenge to the international community today. Moreover, space law’s simplicity is challenged by the growing, each and every day, different technology as like as newfangled aspect to use of outer space. Another important undertaking is an upholding sustainable use of space for economic, social and environmental development, basically for developing countries. This stressed by general assembly resolution indicated that “The general assembly of UN stresses the importance of promoting effective means of using space technology to assist in the solution of problems of regional or global significance and of strengthening the capabilities of Member States, in particular developing countries, to use the applications of space research for economic, social and cultural development” [(United Nations, 2000)](https://www.scirp.org/journal/paperinformation.aspx?paperid=85201#ref49). The objectives of this research are to make fertile events of present complications of outer space law; to identify the national and international challenges to sustainable uses of outer space; and to attempt to accumulate urgently required development of outer space for peacefully gaining the potential benefits for humankind.

Sustainable development is the **establishing** principle for achieving present human needs without damaging the demands of future generations maintaining integrity and constancy of the natural systems. The modern idea of sustainable development is derived from the Brundtland Report in 1987. Generally considered in modern application and exploration of outer space, fundamental elements are the area must be dedicated to peaceful purposes; and the area must be preserved for future generations [(Heim, 1990)](https://www.scirp.org/journal/paperinformation.aspx?paperid=85201#ref17). It is an **indispensable** and inordinate challenge to confirm uphold the healthy environment and make sure development without destroying the rights of future generations in space. Article IX of The Outer Space Treaty provided, in the exploration and use of outer space, States should pursue studies and conduct exploration of outer space so as to avoid harmful contamination and also adverse changes in the environment of the Earth [(Outer Space Treaty, 1967)](https://www.scirp.org/journal/paperinformation.aspx?paperid=85201#ref35). The issues of what constitutes harmful contamination in Earth’s environment have yet to be interpreted. The legal definition of “adverse” and “harmful” will also modification as Earth, indigenous sciences progress, separately or in concert, with the planetary exploration space sciences [(Robinson, 2005)](https://www.scirp.org/journal/paperinformation.aspx?paperid=85201#ref38). As a result of multifaceted political, economic, scientific, technological, educational, and other global problems, there has been practicing exclusively only international cooperation for sustainable space development among the developed countries [(Noichim, 2005)](https://www.scirp.org/journal/paperinformation.aspx?paperid=85201#ref34). The space faring nations should promote a supportive environment for peaceful and sustainable use of space, decrease environmental effects on Earth and protect the terrestrial environment. We should escape a regime that will ultimately reflect the over-exploitation of resources and environmental havoc [(Fountain, 2002)](https://www.scirp.org/journal/paperinformation.aspx?paperid=85201#ref9).

Adoption of space law treaties and principles at the international level is a foremost landmark in the development of the first era of international space law. Space law treaties and principles arrange a set of rules to ensure the peaceful and sustainable uses of outer space. In the matter of raising space faring nations, implementation of the existing space law is also an abundant challenge. Moreover, some major space faring countries did not ratify some of the treaty and more or less other countries raise the question of the effectiveness of present laws. About the advance notification of space activities, Article XI of the Outer Space Treaty provides, appropriately notify conducting space activities by the space faring State to the United Nations as well as the public together with nature, locations, conduct, general function of the space object and results of such activities [(Outer Space Treaty, 1967)](https://www.scirp.org/journal/paperinformation.aspx?paperid=85201#ref35). The world is now perceiving multiplayer space power, control the use of nuclear weapons and other kinds of weapons in space is excessive undertaking. Article IV delivers, “States Parties to the Treaty undertake not to place in orbit around the earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner” [(Outer Space Treaty, 1967)](https://www.scirp.org/journal/paperinformation.aspx?paperid=85201#ref35). This article is one of the most significant provisions on arms control is accompanied by other treaties of arms control. Commercialization of space is widely spread issue in outer space activities and major space faring nations like the U.S. highly promoted commercialization by private and non-governmental sectors. Appropriate administration, supervision and control are a vigorous **concern** for absent of international and national appropriate law. Article VI of the Outer Space Treaty provides that, the activities of non-governmental entities in outer space shall require authorization and provide continuing supervision by way of national legislation or any other means in order to ensure that national activities were carried out in conformity with the provisions of the outer space treaty [(Outer Space Treaty, 1967)](https://www.scirp.org/journal/paperinformation.aspx?paperid=85201#ref35). Preserve environmental balance by decrease adversarial environmental changes. Harmful contamination through the extra environmental matter of the celestial bodies could introduce adverse environmental changes. Article 7.1 of the Moon Agreement states that “States’ Parties shall take measures to prevent the disruption of the existing environmental balance” [(“Moon Agreement”, 1979)](https://www.scirp.org/journal/paperinformation.aspx?paperid=85201#ref31). Article IX of the Outer Space Treaty is required in the exploration and use of outer space “to avoid [its] harmful contamination”. Regarding “the environment of the Earth” treaty required to “avoid adverse changes... resulting from the introduction of extraterrestrial matter and, where necessary shall adopt appropriate measures for this purpose” [(Outer Space Treaty, 1967)](https://www.scirp.org/journal/paperinformation.aspx?paperid=85201#ref35).

#### **Sustainable development solves climate change**

**Santos 13** [Filipe Durate Santos—Center for Astrophysics and Gravitation, “Space System for Sustainable Development,” Apogeo Spatial, 03-01-2013, <https://apogeospatial.com/space-system-for-sustainable-development/>]

The space environment is being used by more and more State and private sector entities for an increasingly diverse range of outer space activities. The long-term sustainability of these activities is currently in **danger** due to the proliferation of space debris, the growing probability of collisions, and the congestion of orbital positions and radio frequency spectra, particularly in the low-Earth orbit and geostationary orbit environments. However, space activities contribute decisively to the well-being of humanity and to sustainable development. Sustainability is a relatively recent concept introduced in the 1980s and defined by the United Nations World Commission on the Environment and Development in 1987 as “development which meets the needs of the present without compromising the ability of future generations to meet their own needs.” This definition did not satisfy everyone, and other definitions arose. Gradually, it became clear that sustainable development is not a concept of a strictly scientific nature that can be defined without ambiguities; opinions differ on what precisely should count among the human needs for the application of the principle of intergenerational equity. These needs can be categorized into the social, economic, and environmental realms, but the relative importance of the different components is a matter of opinion. Sustainable development is these days a meeting point for the debate about the state of the world and how to respond to the social, economic, environmental, and institutional challenges we are facing. We are still very far from achieving it but we can identify the main drivers of unsustainability, which can be organized into four leading groups. Space systems play a crucial role in addressing the problems raised by these four groups of drivers, which constitute the “square of unsustainability.” See FIGURE 1. Finally, the fourth driver is anthropogenic climate change, mainly due to CO2 emissions from fossil fuel burning and to land use changes, especially deforestation. All four groups of drivers are strongly interconnected and interdependent. To reach some form of sustainable development, these issues must be addressed in ways that are both simultaneous and integrated. The magnitude and difficulty of this task reveal the perilous state the world is in. **Climate change** is one of the **majo**r environmental risks facing humanity in the 21st century. The scientific community has reached a strong consensus that anthropogenic emissions of greenhouse gases are intensifying the natural greenhouse effect in the atmosphere. These emissions are causing a climate change that will very likely intensify during the 21st century. The signs that this climate change is happening are becoming ever more obvious and unequivocal. According to the Intergovernmental Panel on Climate Change (IPCC), the global average surface temperature (land and ocean) has increased by 0.8° C since preindustrial times and by 1.0° C over land alone. In the Arctic, the average surface temperature increase has been higher, about twice the global value. Earth observation from space over the past 50 years has **fundamentally** changed our understanding and knowledge of the Earth system. See FIGURE 5. With increasingly sophisticated space systems, it is now possible to obtain quantitative measurements of temperatures in the atmosphere, concentrations of atmospheric gases, precipitation and wind speed, elevations of land and water, water movement, types of soils, and vegetation cover. In addition, satellite observations yield continually updated knowledge of the state of the atmosphere, helping meteorologists to devise models that project the weather into the future with much improved accuracy compared to pre-satellite forecasts. Seven-day forecasts have more than doubled in accuracy over the past three decades, particularly in the Southern Hemisphere. Satellites have been used to monitor the stratospheric ozone layer, which blocks damaging ultra-violet light from reaching the Earth’s surface, and to monitor atmospheric aerosol loading. Furthermore, they have contributed decisively to improvements in our understanding of the climate system and of climate change, through monitoring of the atmosphere, sea and land surface temperatures, ice sheet floes, Arctic sea ice extension, the El Niño-Southern Oscillation, and Earth’s carbon cycle. Recently, an ensemble of satellite altimetry, interferometry, and gravimetry datasets has been used to conclude that, since 1992, melting of the polar ice sheets has contributed, on average, 0.59 mm to the annual rate of global sea level rise. Extreme precipitation and floods are very likely to become more frequent because of climate change. Floods are just one example of various types of disasters where satellites are very useful for humanitarian relief, rapidly mapping and assessing local emergency situations and reconstruction activities. Space systems are extensively used these days in the management of disasters related to geophysical, meteorological, hydrological and climatic events. The uses of satellites in disaster management are becoming more integral to reducing reaction time and to providing accurate information for rescue and disaster control operations. Satellites are very useful in disasters for communications, remote sensing and mapping. Meteorological and storm warning satellite technology can also help in predicting water-related disasters and in setting up precautionary activities.

#### **Climate Change disproportionally affects Black and poor.**

**Cullors et at 17**[Patrisse Cullors(native-born Angeleno and an artist, organiser and freedom fighter, co-founder of Black Lives Matter), Nyeusi Nguvu(activist, abolitionist and artist, writing under a pseudonym). “From Africa to the US to Haiti, climate change is a race issue.” The Guardian. 9/14/19. Accessed 10/26/19. <https://www.theguardian.com/commentisfree/2017/sep/14/africa-us-haiti-climate-change-black-lives-matter//> Houston Memorial DX]

**Climate change is global, and its impact will be felt globally by most,** but when we assess factors such as death, disease, access to resources/aid, insurance policy holders, land ownership, means to evacuate from danger zones, quality of and access to housing, **displacement, and forced migration,** **these**[**harsh realities disproportionately affect**](https://www.theguardian.com/commentisfree/2016/sep/07/black-lives-matter-protesters-air-pollution-race-issue-london)**black and poor communities after a disaster, not white ones.** We are not saying that white people do not feel the impact of climate change. We are saying **that if you are black then you are more likely to die as a result of it – and, if you survive, are more likely to struggle to replace what was lost and will receive little support** in doing so. Unfortunately**, due to**[**rising global inequality**](https://www.theguardian.com/business/2017/jan/11/inequality-world-economy-wef-brexit-donald-trump-world-economic-forum-risk-report)**– that remains part of the legacy of imperialism** and colonialism, and part of the present reality of globalisation and capitalism – we also know that the **resources required** to respond to climate change’s impact are often[**not placed in the hands**](https://www.theguardian.com/global-development-professionals-network/2015/nov/13/five-reasons-funding-should-go-directly-to-local-ngos)**of the people who need them most. Donations, such as those to the**[**Red Cross after a disaster in Haiti**](http://www.npr.org/2015/06/03/411524156/in-search-of-the-red-cross-500-million-in-haiti-relief)**often do not find the way to the frontlines and those in need – mostly black and poor folk** – are left waiting as charities play with bureaucracy, respectability and budget lines to ensure that their staff’s salaries are covered before they take action.

#### **(?) Social Inequality is the root cause of conflict – studies prove**

**Bahgat et al 17**(KARIM BAHGAT GRAY BARRETT KENDRA DUPUY SCOTT GATES SOLVEIG HILLESUND HÅVARD MOKLEIV NYGÅRD (PROJECT LEADER) SIRI AAS RUSTAD HÅVARD STRAND HENRIK URDAL GUDRUN ØSTBY April 12, 2017 Background report for the UN and World Bank Flagship study on development and conflict Prevention, “Inequality and Armed Conflict: Evidence and Data” Page 185 – 186, Peace Research Institute Oslo, <https://reliefweb.int/sites/reliefweb.int/files/resources/Inequality%20and%20Conflict%20Full%20Report.pdf>)

Conclusion: preventing conflict and sustaining peace What is the relationship between inequality and armed conflict, what are trends in inequality, and how can patterns of inclusion and exclusion be addressed? Getting the answer to these questions ‘right’ is crucial for developing successful policies for preventing conflict and sustaining peace. We have outlined the available scientific evidence on these questions. Inequality has been a central concern for a large scholarly body of work, but despite the substantial attention that has been paid to understanding vertical inequalities and conflict, there is no conclusive answer as to whether, why, and how this type of inequality impacts conflict. While the conventional wisdom is that inequality should trigger conflict, methodological and conceptual problems plague the study of vertical inequality and conflict. More problematic is the fact that this literature struggles to answer the question of how and why inequality mobilizes certain groups for violence. Partially in response to this, scholars have shifted focus to examining horizontal inequalities. **The horizontal inequality literature examines how inequalities based on group identities, such as ethnicity, region, and religion, influence the incidence of conflict. There is a solid amount of support in the literature for the argument that high levels of horizontal economic and political inequalities among the relatively deprived make violent conflict more likely,** but only mixed evidence regarding the relatively privileged, and very limited evidence for the influence of social horizontal inequalities. We still need more research and evidence about which types of group-based identities matter for mobilizing people to engage in conflict, and how and why they do. This includes a need for more knowledge about the role of perceptions and emotion in making certain identities more salient than others. Several prominent authors within the horizontal inequality literature (Gurr 1970, Stewart 2000, 2002, Cederman et al 2013) have pointed out the importance of perceptions of inequalities. The literature on perceived horizontal inequalities remains small, but the few studies that exist do find a relationship between perceived inequalities and attitudes towards violence. Importantly, these studies show that objective and perceived horizontal inequalities do not necessarily overlap. On the contrary, the correlation between the two is not as high as expected, a pattern we confirm and further document using fine-grained survey data. This is important, since it means that the relationship between perceived HI and conflict attitudes is not a proxy for the relationship found between objective HI and conflict. The pattern of overlap between objective and subjective inequalities also varies. It tends to be higher for (perceived) inequality between regions, but lower for inequality between ethnic groups. There are at leastwo plausible explanations for this. First, regions might simply not be the best group identifier to use as the basis of calculating HI – for most people the spatial or regional identity is not that relevant or salient compared to ethnic groups. Second, the survey question used to calculate perceived ethnic HI was specifically used to ask how the respondents’ ethnic group compared to other ethnic groups. That is, the respondent was asked to compare their ethnic group with other ethnic groups This highlights the need for more and better quality data to measure perceived inequalities, as well as data on how these perceptions are triggered. Without such data, we can not fully assess how inequalities affects conflict. It is essential that large survey undertakings, such as the AfroBarometer, continue to collect data on perceptions, which they failed to do in Round 5 and 6. The ShaSA surveys, which cover 10 African countries, also include questions of political perceptions, but they do not probe specifically for identity groups and are therefore less suitable for testing perceived horizontal inequalities. This, however, could easily be changed by adding a few more focused questions to the standard questionnaire. The evidence base for the relationship between inequality and armed conflict relies on high-quality, fine-grained data on inequalities. We document and map available sources that can be used to measure and track both vertical and horizontal (objective and perceived) inequalities. Inequality is a complex phenomenon. In a given country (or region) or a given time, to a large extent the level of inequality depends on how it is operationalized and measured. Vertical (economic) inequality is most commonly measured using the Gini coefficient. The best empirical database on income inequality data is the Wider Income Inequality Database, which is based on a wide variety of national surveys. These surveys differ in their reliability, coverage and definition of income. To construct a reliable measure of vertical inequality we sort all surveys according to their reliability, coverage and definition of income, and then use the best surveys for each country-year observation. It should be noted that this, not surprisingly, reveals that the best, most reliable data on income inequality are found in open, rich economies, whereas data on Africa and Asia is much less reliable. Perhaps more problematically, we find that countries with higher levels of inequality tend to systematically have lower quality data on such inequality. Nonetheless, using this data we find that the world currently has the highest levels if income inequality on record: globally, inequality decreased from 1960 to 1990, but then the trend reversed and inequality climbed back to 1960s levels. It has since stayed around or above these levels.