# Space Aflac

#### I affirm. Resolved: The appropriation of outer space by private entities is unjust.

### Framework

#### The value is justice.

#### The criterion is utilitarianism.

#### Life is a prerequisite for utility because dying forecloses all future goods. This meaning we evaluate the round based on who saves the most lives.

#### There are three justifications.

#### all other consequentialist moral theories devolve to life utility because at their root they all seek to maximize the best consequences, which cannot occur without life.

#### Governments must use util calculus because they’re collective agents rather than individual agents. Prefer this standard because it’s specific to the agent of the resolution.

**Goodin 90:**

(Robert E. Goodin is professor of government at the University of Essex and professor of philosophy and social and political theory at the Australian National University. He is a Fellow of the Academy of the Social Sciences in Australia and a Corresponding Fellow of the British Academy.“The Utilitarian Response” pages 141-142. 1990.)

Consider, first, the argument from necessity. **Public officials** are obliged to **make their choices under uncertainty**, and uncertainty of a very special sort at that. All choices – public and private alike – are made under some degree of uncertainty, of course. But in the nature of things, private individuals will usually have more complete information on the peculiarities of their own circumstances and on the ramifications that alternative possible choices might have for them. **Public officials**, in contrast, **are relatively poorly informed as to the effects that their choices will have on individuals, one by one. What they typically do know are generalities: averages and aggregates**. They know what will happen most often to most people as a result of their various possible choices. But that is all.**That is enough to allow public policy-makers to use** the **utilitarian calculus** – assuming they want to use it at all – **to choose general rules of conduct.** Knowing aggregates and averages, **they can** proceed to **calculate** the **utility payoffs from adopting each alternative possible general rule**. But they cannot be sure that the payoff will do to any given individual or on any particular occasion. Their knowledge of generalities, aggregates and averages is just not sufficiently fine-grained for that.

#### Life util is the only moral theory that respects the equality of all moral agents.

**Cummiskey 90:**

(Dr. David Cummiskey, Bates College. “Kantian Consequentiaism.”Ethics, Vol. 100, No. 3 (Apr., 1990), pp. 586-615 Published by: The University of Chicago Press. Stable URL: https://www.jstor.org/stable/2381810)

We must not obscure the issue by characterizing this type of case as the sacrifice of individuals for some abstract “social entity.” It is not a question of some persons having to bear the cost for some elusive “overall social good.” Instead, the question is whether some persons must bear the inescapable cost for the sake of other persons. Robert Nozick, for example, argues that “to use a person in this way does not sufficiently respect and take account of the fact that he is a separate person, that his is the only life he has.” But why is this not equally true of all those whom we do not save through our failure to act? By emphasizing solely the one who must bear the cost if we act, we fail to sufficiently respect and take account of the **many other** separate **persons**, each with only one life, who will **bear the cost of our inaction**. In such a situation, what would a conscientious Kantian agent, an agent motivated by the unconditional value of rational beings, choose? A morally good agent recognizes that the basis of all particular duties is the principle that “rational nature exists as an end in itself”. Rational nature as such is the supreme objective end of all conduct. **If one truly believes that all rational beings have an equal value, then the rational solution to such a dilemma involves maximally promoting the lives** and liberties **of as many rational beings as possible**. In order to avoid this conclusion, the non-consequentialist Kantian needs to justify agent-centered constraints. As we saw in chapter 1, however, even most Kantian deontologists recognize that agent-centered constraints require a non- value-based rationale. But we have seen that Kant’s normative theory is based on an unconditionally valuable end. How can a concern for the value of rational beings lead to a refusal to sacrifice rational beings even when this would prevent other more extensive losses of rational beings? If the moral law is based on the value of rational beings and their ends, then what is the rationale for prohibiting a moral agent from maximally promoting these two tiers of value? If I sacrifice some for the sake of others, I do not use them arbitrarily, and I do not deny the unconditional value of rational beings. Persons may have “dignity, that is, an unconditional and incomparable worth” that transcends any market value, but persons also have a fundamental **equality** that **dictates that some must** sometimes **give way for the sake of others.** The concept of the end-in-itself does not support the view that we may never force another to bear some cost in order to benefit others.

### Contention 1: The Expansion of Capitalism

#### The private appropriation of space undermines its status as a commons for humanity in favor of exploitative capitalists.

**Shammas and Holen 19**

(Victor L. Shammas, Oslo Metropolitan University, Work Research Institute (AFI), Oslo, Norway & Tomas B. Holen, Independent scholar, Oslo, Norway. “One giant leap for capitalist kind: private enterprise in outer space” Palgrave Communications volume 5, Article number: 10 (2019). <https://www.nature.com/articles/s41599-019-0218-9>)

In this sense, **SpaceX**’s Falcon Heavy also **carried a crucial ideological payload: the very idea of private enterprise and capitalist relations overtaking outer space.**3 The Falcon Heavy conveyed this idea quite concretely. Onboard the rocket was an electric car, a Tesla Roadster (said to be Elon Musk’s personal vehicle), which functioned as the rocket’s ‘dummy load', playing David Bowie’s ‘Space Oddity' and ‘Life on Mars?' on repeat on the car’s stereo system. An enticing marketing stunt viewed by millions online through SpaceX’s YouTube live stream—with 2.3 million concurrent views, it was the second biggest live stream in YouTube history (Singleton, 2018)—the Falcon Heavy test flight embraced the logic of ‘cool capitalism' (Schleusener, 2014), with in-jokes referencing Douglas Adam’s Hitchhiker’s Guide to the Galaxy, while heralding **the arrival of a commercialized space age**, **dubbed** by industry insiders **as** the age of ‘**NewSpace**'.4

But how are we to understand NewSpace? In some ways, NewSpace signals the emergence of **capitalism in space**. The production of carrier rockets, placement of satellites into orbit around Earth, and the exploration, exploitation, or colonization of outer space (including planets, asteroids, and other celestial objects), **will not be the work of humankind** as such, a pure species-being (Gattungswesen), **but of particular capitalist entrepreneurs** who stand in for and represent humanity. Crucially, they will do so in ways modulated by the exigencies of capital accumulation. These enterprising capitalists are forging a new political-economic regime in space, a post-Fordism in space **aimed at profit maximization** and the apparent minimization of government interference. A new breed of charismatic, starry-eyed entrepreneurs, including Musk’s SpaceX, Richard Branson’s Virgin Galactic, and Amazon billionaire Jeff Bezos’s Blue Origin, to name but a selection, aim at becoming ‘capitalists in space' (Parker, 2009) or space capitalists. Neil Armstrong’s famous statement will have to be reformulated: space will not be the site of ‘one giant leap for mankind', but rather one giant leap for capitalist kind. 5 With the ascendancy of NewSpace, humanity’s future in space will not be ‘ours', benefiting humanity tout court, but will rather be the result of particular capitalists, or capitalist kind,6 toiling to recuperate space and bring its vast domain into the fold of capital accumulation: **NewSpace sees outer space as the domain of private enterprise, set to** become the ‘first-trillion dollar industry', according to some estimates, and likely to **produce the world’s first trillionaires** (see, e.g., Honan, 2018)—as opposed to Old Space, a derisive moniker coined by enthusiastic proponents of capitalism-in-space, widely seen to have been the sole preserve of the state and a handful of giant aerospace corporations, including Boeing and Lockheed Martin, in Cold Warera Space Age.

Under Donald Trump’s presidency, the adherents of NewSpace have found a ready political partner. **The commercialization of outer space was already well under way with Obama**’s 2010 National Space Policy, which emphasized ‘promoting and supporting a competitive U. S. commercial space sector', which was ‘considered vital to…continued progress in space' (Tronchetti, 2013, p. 67–68). **But the Trump administration** has **aggressively pursued the deregulation of outer space in the service of profit margins.** Wilbur Ross, President Trump’s Secretary of Commerce, has eagerly supported the private space industry by pushing the dismantling of regulatory frameworks. As Ross emphatically stated, ‘The rate of regulatory change must accelerate until it can match the rate of technological change!' (Foust, 2018a). Trump has proposed privatizing the provision of supplies to the International Space Station (ISS) while re-establishing the Cold War-era National Space Council, which includes members from Lockheed Martin, Boeing, ULA, and a series of NewSpace actors, such as SpaceX and Blue Origin. Ross was visibly enthusiastic about SpaceX’s Falcon Heavy launch in February 2018 and seemed to embrace Musk’s marketing ploy. ‘It was really quite an amazing thing', Ross said. ‘At the end of it, you have that little red Tesla hurdling [sic] off to an orbit around the sun and the moon' (Bryan, 2018). That same month, Ross spoke before the National Space Council, commenting appreciatively that ‘space is already a $330 billion industry' that was set to become a ‘multitrillion-dollar one in coming decades'. He noted that private corporations needed ‘all the help we can give them' and said it was ‘time to unshackle business activity in space' (Department of Commerce, 2018).

Secretary Ross’s remarks followed on the heels of the American Space Commerce Free Enterprise Act, a U.S. House of Representatives bill introduced in 2017, which, in a remarkable volteface, unilaterally declared that ‘space is not a global commons', a crucial departure from ratified international treaties that paved the way for private property rights and the exploitation of precious resources in outer space. In case anyone had missed this little-noticed policy démarche, tucked away in the midst of an obscure piece of legislation, one of Trump’s supporters, the executive director of the National Space Council, Scott Pace, publicly reiterated that ‘outer space is not…the “common heritage of mankind”, not “res communis”, nor is it a public good' (Pace, 2017). Instead, outer space was quickly being recast as a private good or a space for private property. As the United States became ‘ “open for business” in space' (Smith, 2017), in the words of one Republican congressman, **space** itself **was being opened up to the interests of private enterprise.**

**The Outer Space Treaty** of 1967 **established** space as terra nullius. One of the treaty’s premises is **that no celestial body can be claimed as the property of any particular state**, so that ‘outer space…is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means'.7 While this does not prevent nations from extracting resources from celestial bodies, there is a clear requirement that these activities benefit all of Earth’s inhabitants (Tronchetti, 2013, p. 14; Lyall and Larsen, 2009), paving the way for kind of communism in space which precludes the proclivities of capitalist kind. As noted, however, **the** Outer Space **Treaty’s assertion of space as a commons has come under pressure** in recent years, at first in the form of so many quasi-comical ventures, bordering on fraudulent shams, with a flourishing online trade in ‘lunar property'— ‘Everybody Is Saying It…Nothing Could Be Greater Than To Own Your Own Crater!'8 —including the production of seemingly authentic land deeds that remain practically unenforceable and contravened by treaty obligations anyway. More recently, its status as commons has been denied by President Trump and leading US Republicans. Communism in space was a possibility only so long as space was materially inaccessible to capitalistkind: as space becomes a probable site of profitable ventures, the Outer Space Treaty’s proto-communism must falter and fade away.

Certain parallels exist between the exploration and colonization of outer space and similar maritime ventures back on Earth. To take but one limited aspect of the overlapping legal issues raised by these two areas, that of resource exploitation: the 1982 United Nations Convention on the Law of the Sea (UNCLOS) established that the ‘seabed and ocean floor' beyond a nation’s territorial waters (or ‘the Area') are the ‘common heritage of mankind, the exploration and exploitation of which shall be carried out for the benefit of mankind as a whole'. Like outer space, Earth’s seabed is part of the commons. Similarly, the International Seabed Authority, which was established to oversee the 1982 convention, is to ‘provide for the equitable sharing of financial and other economic benefits derived from activities in the Area' (UN, 1982, p. 71). In principle, then, any profits arising from, e.g., the mining of polymetallic nodules, are to be shared with all of humankind, including ‘developing States, particularly the least developed and the land-locked among them' (UN, 1982, p. 56). Whether this is likely is to happen is, according to a recent review, likely to be hampered by two factors. First, the commercial exploitation of seabed metals, which is first and foremost a technical issue, ‘seems as far away as ever' (Wood, 2008). Second, and perhaps more importantly, the political climate surrounding the creation and ratification (with the exception of the United States) of the 1982 convention has now appreciably shifted: ‘Much of the ideological passion that characterized the debates in the First Committee of the Third UN Conference on the Law of the Sea, and to some degree also in the Preparatory Commission, have now subsided' (Wood, 2008). As with outer space, the ocean floor becomes a legal site of contestation the moment states and corporations are technically capable of exploiting it.

This article adopts an approach broadly derived from the critical theory tradition to analyze NewSpace. Drawing on David Harvey’s notion of spatial fixes, as well as key theoretical insights from such varied thinkers as Hegel, Marx, Bourdieu, and Deleuze and Guattari, this article asks in what ways the NewSpace paradigm can be rethought through a critical (neo-Marxist) political economy framework. Below, we advance three crucial arguments. First, there is an expedient conflation of capitalist interests with a universalizing notion of the interests of humanity. Second, the state continues to play an important role in supporting capital accumulation in space; a key tension in this area is the question of the continued role of the state in facilitating and financing NewSpace ventures—a role that is simultaneously downplayed and even, on occasion, dismissed by NewSpace actors themselves. Finally, we reassess the commercialization of space through Harvey’s concept of the spatial fix, arguing that outer space serves as an important outlet for surplus capital, a site of knowledge production and technological innovation, and a potential reservoir of untapped raw materials. While the future is inherently uncertain, the article spotlights the expansive tendencies of global capital and describe the ways NewSpace actors themselves have come to view outer space as the probable future site of a post-terrestrial form of capital accumulation.

#### Space is the ultimate arena for unlimited capitalist expansion – those new resources sustain capitalism

**Dickens ‘9** (Peter Dickens, Visiting professor of Sociology at the University of Essex, “The Cosmos as Capitalism’s Outside,” The Sociological Review, 57: 66–82)

The imminent conquest of outer space raises the question of ‘outside’ and ‘inside’ yet again. Capitalism now has the cosmos in its sights, an outside which can be privately or publicly owned, made into a commodity, an entity for which nations and private companies can compete. As such the cosmos is a possible site of armed hostilities. This means, contra Hardt and Negri, that there is an outside after all, one into which the competitive market can now expand indefinitely. A new kind of imperialism is therefore underway, albeit not one attempting to conquer and exploit people ‘outside’ since there are no consumers or labour power to exploit in other parts of the solar system. Ferrying wealthy tourists into the cosmos is a first and perhaps most spectacular part of this process of capital's cosmic expansion. Especially important in the longer term is making outer space into a source of resources and materials. These will in due course be incorporated into production-processes, most of which will be still firmly lodged on earth. Access to outer space is, potentially at least, access to an infinite outside array of resources. These apparently have the distinct advantage of not being owned or used by any pre-existing society and not requiring military force by an imperializing power gaining access to these resources. Bringing this outside zone into capitalism may at first seem beneficial to everyone. But this scenario is almost certainly not so trouble-free as may at first seem. On the one hand, the investment of capital into outer space would be a huge diversion from the investments needed to address many urgent inequalities and crises on Earth. On the other hand, this same access is in practice likely to be conducted by a range of competing imperial powers. Hardt and Negri (2000) tell us that the history of imperializing wars is over. This may or may not be the case as regards imperialism on earth. But old-style imperialist, more particularly inter-imperialist, wars seem more likely than ever, as growing and competing power-blocs (the USA and China are currently amongst the most likely protagonists) compete for resources on earth and outer space. Such, in rather general terms, is the prospect for a future, galactic, imperialism between competing powers. But what are the relations, processes and mechanisms underlying this new phenomenon? How should we understand the regional rivalries and ideologies involved and the likely implications of competing empires attempting to incorporate not only their share of resources on earth but on global society's ‘outside’? Social crises, outer spatial fixes and galactic imperialism Explanatory primacy is given here to economic mechanisms driving this humanization of the universe. In the same way that they have driven imperializing societies in the past to expand their economic bases into their ‘outsides’, the social relations of capitalism and the processes of capital-accumulation are driving the new kind of outer space imperialisms. Such is the starting-point of this paper (See alsoDickens and Ormrod, 2007). It is a position based on the work of the contemporary Marxist geographer David Harvey (2003) and his notion of ‘spatial fixes’. Capitalism continually constructs what he calls ‘outer transformations.’ In the context of the over-accumulation of capital in the primary circuit of industrial capital, fresh geographic zones are constantly sought out which have not yet been fully invested in or, in the case of outer space, not yet been invested in at all. ‘Outer spatial fixes’ are investments in outer space intended to solve capitalism's many crises. At one level they may be simply described as crises of economic profitability. But ‘economic’ can cover a wide array of issues such as crises of resource-availability and potential social and political upheavals resulting from resource-shortages. Furthermore, there is certainly no guarantee that these investments will actually ‘fix’ these underlying economic, political and social crises. The ‘fix’ may well be of a temporary, sticking-plaster, variety.

#### The expansion of capitalism leads to two main impacts.

#### First, Economic Collapse is inevitable under capitalism – boom and bust

**Henshall 12** What Causes Boom and Bust? Issue section: Revolutionary Lessons Issue: April 2012(368) By Steve Henshall http://socialistreview.org.uk/368/what-causes-boom-and-bust

In reality, the **history of capitalism** is one of **successive expansions followed by collapse**. Today's apologists will have to choose their words more carefully given the objective reality of the crisis. Yet during booms when new buildings go up on a grand scale, high street sales increase and unemployment falls, enthusiasm towards the market seems to correspond to an extent with reality. The key **factor generating the boom** is the capitalists' drive to **maximise profit**. If profits appear easy to make in one way or another, **companies throughout the system attempt to expand output as quickly as possible**. New machinery is bought and workers are employed. **This increases trade further for those companies that sell the equipment and services required** as well as those selling consumer goods to the growing workforce. The **economy as a whole booms**. But the snag is that the whole process is blind. In a "free" market there is no overall coordination between the different groups of capitalists. Each seeks to expand their output as frantically as possibly. So there **comes a point in every boom where the pools of raw materials, financial help or skilled labour start to dry up**. Growing competition for dwindling resources **increases prices, quickly destroying the profit margins, sending many firms towards bankruptcy**. Their only defence is to attack workers conditions, postpone investment decisions and in many instances close down sections of the company. The boom starts to give way to a slump and a **crisis of "overproduction" emerges**. Unsold commodities stack up and due to attacks on wages or job losses fewer goods can be bought. A cascade is unleashed as fewer goods can be sold and in turn bosses sack more workers. This vicious circle reduces the market size for the goods being produced and the crisis deepens. Economic crises under capitalism occur not because too little is being produced, as happened recurrently under feudalism, for example. Crises happen today because "too much" is produced. This isn't because people's needs have been met, far from it - there is vast unmet need for everything from food to homes, even in the advanced capitalist countries. But under capitalism such needs are only recognised if matched by spending power. Without that goods go unsold. The anarchy of the capitalist mode of production constantly leads to such wastage after periodic booms. For example, during the telecom bubble in the 1990s huge amounts of fibre-optic cable were laid under the ground (in the US alone it amounted to enough to go around the world 1,566 times!). Yet today only a tiny fraction of this is used. Or more recently the opportunity to cash in on the rapid expansion of world trade fuelled by China's economic growth led to a wave of investment in tankers and container ships in the early part of the last decade. The difficulty was that orders placed in 2004 or 2005 are only being delivered this year, in very different economic circumstances. Shipping companies have been left with debts to the tune of $450 billion (further feeding Europe's banking crisis). The central thrust of Marx's political economy is that the **blind drive by competing capitals to accumulate throws the economy into a spasm that cannot be sustained once profits inevitably start to falter**. Each time a crisis hits there are attempts by capitalism's defenders to explain it away as caused by something apparently external to the system. So the return of crisis to world economy in the 1970s after decades of expansion was blamed on the oil price hike that followed the Arab-Israeli War in 1973. Or the economic contraction in the British economy last year was pinned by some on the amount of snow that hit the country. Paul Taylor, the chief executive of the Fitch credit rating agency, was perhaps more honest about the inability to explain why capitalism goes into crises when he proclaimed, "We don't have a crystal ball." No matter how policies are adjusted or how decisions are made by individual capitalists **crises are part and parcel of capitalism**. The suffering and huge waste it causes mean it's an incredibly limited system, one to be thrown into the dustbin of history. Ninety years ago Leon Trotsky summed it up aptly: "Capitalism...live[s] by crises and booms, just as a human being lives by inhaling and exhaling... **Crises and booms were inherent in capitalism from its birth: they will accompany it to its grave**."

#### AND, Economic collapse causes nuclear war

**Tonnesson 15** — (Stein Tonnesson, Leader of programme on East Asian peace @ Uppsala University, “Deterrence, interdependence and Sino–US peace,” *International Area Studies Review,* 18:3, p.297-311, http://journals.sagepub.com/doi/full/10.1177/2233865915596660, accessed 7-13-2017, SagePub, JSO)

Several recent works on China and Sino–US relations have made substantial contributions to the∂ current understanding of how and under what circumstances a combination of nuclear deterrence∂ and economic interdependence may reduce the risk of war between major powers. At least four∂ conclusions can be drawn from the review above: first, those who say that interdependence may∂ both inhibit and drive conflict are right. Interdependence raises the cost of conflict for all sides but∂ **asymmetrical or unbalanced dependencies and negative trade expectations may generate tensions** **leading to trade wars among inter-dependent states that in turn increase the risk of military conflict** (Copeland, 2015: 1, 14, 437; Roach, 2014). The risk may increase if one of the interdependent∂ countries is governed by an inward-looking socio-economic coalition (Solingen, 2015); second,∂ the risk of war between China and the US should not just be analysed bilaterally but include their∂ allies and partners. Third party countries could drag China or the US into confrontation; third, in this context it is of some comfort that the three main economic powers in Northeast Asia (China, Japan and South Korea) are all deeply integrated economically through production networks within∂ a global system of trade and finance (Ravenhill, 2014; Yoshimatsu, 2014: 576); and fourth, decisions for war and peace are taken by very few people, who act on the basis of their future expectations. International relations theory must be supplemented by foreign policy analysis in order to assess the value attributed by national decision-makers to economic development and their assessments of risks and opportunities. **If leaders** on either side of the Atlantic **begin to seriously** fear or **anticipate their own nation’s decline then they may blame this on external dependence, appeal to** **anti-foreign sentiments,** contemplate the **use** of **force to gain respect or credibility,** adopt protectionist policies**, and** ultimately **refuse to be deterred by** either **nuclear arms** or prospects of socioeconomic calamities. Such a dangerous shift could happen abruptly, i.e. under the instigation of∂ actions by a third party – or against a third party. Yet as long as there is both nuclear deterrence and interdependence, the tensions in East Asia are∂ unlikely to escalate to war. As Chan (2013) says, all states in the region are aware that they cannot∂ count on support from either China or the US if they make provocative moves. The greatest risk is not that a territorial dispute leads to war under present circumstances but that changes in the world∂ economy alter those circumstances in ways that render inter-state peace more precarious. If China∂ and the US fail to rebalance their financial and trading relations (Roach, 2014) then a trade war could result, interrupting transnational production networks, provoking social distress, and exacerbating nationalist emotions. This could have unforeseen consequences in the field of security, with∂ nuclear deterrence remaining the only factor to protect the world from Armageddon, and unreliably so. Deterrence could lose its credibility: one of the two great powers might gamble that the other =yield in a cyber-war or conventional limited war, or third party countries might engage in conflict∂ with each other, with a view to obliging Washington or Beijing to intervene.

#### Secondly, Capitalism has fueled global warming past the breaking point, but is not equipped to deal with the consequences.

**Robinson 16** (William I., Prof of Sociology, Global Studies, and Latin American Studies @ UC Santa Barbara, “Sadistic Capitalism: Six Urgent Matters for Humanity in Global Crisis,” Truthout, 4/12/16, http://www.truth-out.org/opinion/item/35596-sadistic-capitalism-six-urgent-matters-for-humanity-in-global-crisis)

The system is fast reaching the ecological limits to its reproduction. We have reached several tipping points in what environmental scientists refer to as nine crucial "planetary boundaries." We have already exceeded these boundaries in three areas -- climate change, the nitrogen cycle and diversity loss. There have been five previous mass extinctions in earth's history. While all these were due to natural causes, for the first time ever, human conduct is intersecting with and fundamentally altering the earth system. We have entered what Paul Crutzen, the Dutch environmental scientist and Nobel Prize winner, termed the Anthropocene -- a new age in which humans have transformed up to half of the world's surface. We are altering the composition of the atmosphere and acidifying the oceans at a rate that undermines the conditions for life. The ecological dimensions of global crisis cannot be understated. "We are deciding, without quite meaning to, which evolutionary pathways will remain open and which will forever be closed," observes Elizabeth Kolbert in her best seller, The Sixth Extinction. "No other creature has ever managed this ... The Sixth Extinction will continue to determine the course of life long after everything people have written and painted and built has been ground into dust." Capitalism cannot be held solely responsible. The human-nature contradiction has deep roots in civilization itself. The ancient Sumerian empires, for example, collapsed after the population over-salinated their crop soil. The Mayan city-state network collapsed about AD 900 due to deforestation. And the former Soviet Union wrecked havoc on the environment. However, given capital's implacable impulse to accumulate profit and its accelerated commodification of nature, it is difficult to imagine that the environmental catastrophe can be resolved within the capitalist system. "Green capitalism" appears as an oxymoron, as sadistic capitalism's attempt to turn the ecological crisis into a profit-making opportunity, along with the conversion of poverty into a tourist attraction.

#### AND, Global warming causes extinction and increases likelihood of global war.

**Sharp and Kennedy 14** (Associate Professor Robert (Bob) A. Sharp is the UAE National Defense College Associate Dean for Academic Programs and College Quality Assurance Advisor. He previously served as Assistant Professor of Strategic Security Studies at the College of International Security Affairs (CISA) in the U.S. National Defense University (NDU), Washington D.C. and then as Associate Professor at the Near East South Asia (NESA) Center for Strategic Studies, collocated with NDU. Most recently at NESA, he focused on security sector reform in Yemen and Lebanon, and also supported regional security engagement events into Afghanistan, Turkey, Egypt, Palestine and Qatar; Edward Kennedy is a renewable energy and climate change specialist who has worked for the World Bank and the Spanish Electric Utility ENDESA on carbon policy and markets; 8/22/14, “Climate Change and Implications for National Security,” *International Policy Digest*, <http://intpolicydigest.org/2014/08/22/climate-change-implications-national-security/>,)

Our planet is 4.5 billion years old. If that whole time was to be reflected on a single one-year calendar then the dinosaurs died off sometime late in the afternoon of December 27th and modern humans emerged 200,000 years ago, or at around lunchtime on December 28th. Therefore, human life on earth is very recent. Sometime on December 28th humans made the first fires – wood fires – neutral in the carbon balance. Now reflect on those most recent 200,000 years again on a single one-year calendar and you might be surprised to learn that the industrial revolution began only a few hours ago during the middle of the afternoon on December 31st, 250 years ago, coinciding with the discovery of underground carbon fuels. Over the 250 years carbon fuels have enabled tremendous technological advances including a population growth from about 800 million then to 7.5 billion today and the consequent demand to extract even more carbon. This has occurred during a handful of generations, which is hardly noticeable on our imaginary one-year calendar. The release of this carbon – however – is changing our climate at such a rapid rate that it threatens our survival and presence on earth. It defies imagination that so much damage has been done in such a relatively short time. The implications of climate change is the single most significant threat to life on earth and, put simply, we are not doing enough to rectify the damage. This relatively very recent ability to change our climate is an inconvenient truth; the science is sound. We know of the complex set of interrelated national and global security risks that are a result of global warming and the velocity at which climate change is occurring. We worry it may already be too late. Climate change writ large has informed few, interested some, confused many, and polarized politics. It has already led to an increase in natural disasters including but not limited to droughts, storms, floods, fires etc. The year 2012 was among the 10 warmest years on record according to an American Meteorological Society (AMS) report. Research suggests that climate change is already affecting human displacement; reportedly 36 million people were displaced in 2008 alone because of sudden natural disasters. Figures for 2010 and 2011 paint a grimmer picture of people displaced because of rising sea levels, heat and storms. Climate change affects all natural systems. It impacts temperature and consequently it affects water and weather patterns. It contributes to desertification, deforestation and acidification of the oceans. Changes in weather patterns may mean droughts in one area and floods in another. Counter-intuitively, perhaps, sea levels rise but perennial river water supplies are reduced because glaciers are retreating. As glaciers and polar ice caps melt, there is an albedo effect, which is a double whammy of less temperature regulation because of less surface area of ice present. This means that less absorption occurs and also there is less reflection of the sun’s light. A potentially critical wild card could be runaway climate change due to the release of methane from melting tundra. Worldwide permafrost soils contain about 1,700 Giga Tons of carbon, which is about four times more than all the carbon released through human activity thus far. The planet has already adapted itself to dramatic climate change including a wide range of distinct geologic periods and multiple extinctions, and at a pace that it can be managed. It is human intervention that has accelerated the pace dramatically: An increased surface temperature, coupled with more severe weather and changes in water distribution will create uneven threats to our agricultural systems and will foster and support the spread of insect borne diseases like Malaria, Dengue and the West Nile virus. Rising sea levels will increasingly threaten our coastal population and infrastructure centers and with more than 3.5 billion people – half the planet – depending on the ocean for their primary source of food, ocean acidification may dangerously undercut critical natural food systems which would result in reduced rations. Climate change also carries significant inertia. Even if emissions were completely halted today, temperature increases would continue for some time. Thus the impact is not only to the environment, water, coastal homes, agriculture and fisheries as mentioned, but also would lead to conflict and thus impact national security. Resource wars are inevitable as countries respond, adapt and compete for the shrinking set of those available resources. These wars have arguably already started and will continue in the future because climate change will force countries to act for national survival; the so-called Climate Wars. As early as 2003 Greenpeace alluded to a report which it claimed was commissioned by the Pentagon titled: An Abrupt Climate Change Scenario and Its Implications for U.S. National Security. It painted a picture of a world in turmoil because global warming had accelerated. The scenario outlined was both abrupt and alarming. The report offered recommendations but backed away from declaring climate change an immediate problem, concluding that it would actually be more incremental and measured; as such it would be an irritant, not a shock for national security systems. In 2006 *the* Center for Naval Analyses (*CNA*) – Institute of Public Research – convened a board of 11 senior retired generals and admirals to assess National Security and the Threat to Climate Change. Their initial report was published in April 2007 and made no mention of the potential acceleration of climate change. The team found that climate change was a serious threat to national security and that it was: “most likely to happen in regions of the world that are already fertile ground for extremism.” The team made recommendations from their analysis of regional impacts which suggested the following. Europe would experience some fracturing because of border migration. Africa would need more stability and humanitarian operations provided by the United States. The Middle East would experience a “loss of food and water security (which) will increase pressure to emigrate across borders.” Asia would suffer from “threats to water and the spread of infectious disease. ” In 2009 the CIA opened a Center on Climate Change and National Security to coordinate across the intelligence community and to focus policy. In May 2014, CNA again convened a Military Advisory Board but this time to assess National Security and the Accelerating Risk of Climate Change. The report concludes that climate change is no longer a future threat but occurring right now and the authors *appeal to* the security community, theentire government and the American people to not only build resilience against projected climate change impacts but to form agreements to stabilize climate change and also to integrate climate change across all strategy and planning. The calm of the 2007 report is replaced by a tone of anxiety concerning the future coupled with calls for public discourse and debate because “time and tide wait for no man.” The report notes a key distinction between resilience (mitigating the impact of climate change) and agreements (ways to stabilize climate change) and states that: *Actions by the U*nited *S*tates and the international community *have been insufficient* to adapt to the challenges associated with projected climate change. Strengthening resilience to climate impacts already locked into the system is critical, but this will reduce long-term risk only if improvements in resilience are accompanied by actionable agreements on ways to stabilize climate change. The 9/11 Report framed the terrorist attacks as less of a failure of intelligence than a failure of imagination. Greenpeace’s 2003 account of the Pentagon’s alleged report describes a coming climate Armageddon which to readers was unimaginable and hence the report was not really taken seriously. It described: A world thrown into turmoil by drought, floods, typhoons. Whole countries rendered uninhabitable. The capital of the Netherlands submerged. The *borders* of the U.S. and Australia patrolled by armies firing into waves of starving boat people desperate to find a new home. Fishing boats armed with cannon to drive off competitors. Demands for access to water and farmland backed up with nuclear weapons. The CNA and Greenpeace/Pentagon reports are both mirrored by similar analysis by the World Bank which highlighted not only the physical manifestations of climate change, but also the significant human impacts that threaten to unravel decades of economic development, which will ultimately foster conflict. *Climate change is* the quintessential “Tragedy of the Commons,” where the cumulative impact of many individual actions (carbon emission in this case) is not seen as linked to the marginal gains available to each individual action and not seen as cause and effect. It is simultaneously huge, yet amorphous and nearly invisible from day to day. It is occurring very fast in geologic time terms, but in human time it is (was) slow and incremental. Among environmental problems, it is uniquely *global*. With our planet and culture figuratively and literally honeycombed with a reliance on fossil fuels, we face systemic challenges in changing the reliance across multiple layers of consumption, investment patterns, and political decisions; it will be hard to fix!

### Contention 2: Pollution

#### Continued rocket flights leave soot, burned fuel, and other harmful materials in the Earth’s atmosphere.

**Pultarova 21**

[Tereza Pultarova](https://www.space.com/author/tereza-pultarova) published July 26, 2021, https://www.space.com/environmental-impact-space-tourism-flights

**Scientists worry that** growing numbers of **rocket flights and** the rise of [**space tourism**](https://www.space.com/topics/space-tourism) **could harm** [**Earth's atmosphere**](https://www.space.com/17683-earth-atmosphere.html) **and contribute to climate change**.

When **billionaires** [Richard Branson](https://www.space.com/virgin-galactic-unity-22-branson-flight-success) and [Jeff Bezos](https://www.space.com/jeff-bezos-blue-origin-first-astronaut-launch) **soared into space** this month **aboard** their companies' **suborbital tourism vehicles**, much of the world clapped in awe.

**But** for some scientists, these milestones represented something other than just a technical accomplishment. Achieved after years of delays and despite [significant setbacks](https://www.space.com/30073-virgin-galactic-spaceshiptwo-crash-pilot-error.html), **the flights marked the** potential **beginning of** a long-awaited era that might see **rockets** fly **through the so-far** rather **pristine upper layers of the atmosphere** far more often than they do today. In the case of SpaceShipTwo, **the vehicle operated by Branson's Virgin Galactic,** these flights are powered by a hybrid engine that **burns rubber and leaves** behind **a cloud of soot.**

#### Rocket launches leave behind small, harmful particles in the atmosphere that leads to increased global warming.

**Mann 21**

[Adam Mann](https://www.livescience.com/author/adam-mann) is a freelance journalist with over a decade of experience, specializing in astronomy and physics stories. He has a bachelor's degree in astrophysics from UC Berkeley. His work has appeared in the New Yorker, New York Times, National Geographic, Wall Street Journal, Wired, Nature, Science, and many other places. published July 19, 2021; https://www.livescience.com/new-shepard-emissions.html

**New Shepard, which billionaire Bezos will ride** on its initial crewed flight tomorrow (July 20), **is combining liquid** [**hydrogen**](https://www.livescience.com/28466-hydrogen.html) **and liquid** [**oxygen**](https://www.livescience.com/28738-oxygen.html) **in its engine** to generate thrust, meaning "the main emissions will be water and some minor combustion products, and virtually no CO2," Darin Toohey, an atmospheric scientist at the University of Colorado, Boulder, told Live Science in an email. (Water — H2O — is composed of hydrogen and oxygen.)

**Water in rocket exhaust can increase the number of clouds in the atmosphere,** Toohey added, including the iridescent "mother-of-pearl" clouds often seen at sunset after a launch. **These can impact the upper atmospheric layers known as the mesosphere and** [**ionosphere**](https://www.livescience.com/65947-ionosphere.html)**,** but because the number of rocket launches is so low at present, they are not much of a concern in climate modeling, he and a co-author [wrote in a 2019 article](https://eos.org/features/the-coming-surge-of-rocket-emissions) for Eos, the news magazine of the American Geophysical Union.

That could change as launch rates increase in the near future, and a good deal of the Eos article involves a call for more studies of the potential impact from such flights.

**Carbon dioxide pollution from spaceflight** is still fairly negligible, with **rockets accounting for around 0.0000059% of all CO2 emissions in 2018,** according to Everyday Astronaut. (The airline industry was around 2.4% of global CO2 emissions that same year). But while ice and clouds can reflect sunlight back into space and reduce global heat, **water vapor is a more potent** [**greenhouse gas**](https://www.livescience.com/37821-greenhouse-gases.html) **than carbon dioxide, and the longer that vapor remains in the atmosphere, the greater it will heat our planet.**

"**Water vapor up in the higher parts of the atmosphere are not completely harmless**," Florian Kordina, who wrote the Everyday Astronaut article, told Live Science in a direct message on Twitter. "But since New Shepard will cut off its engine relatively early in the flight, very little [water] will even get high enough to stay up there."

**The main concern when it comes to rocket flights are small particles such as soot and aluminum oxides**, Toohey said. "**These can have a disproportionate impact on the atmosphere,**" he wrote. "**A very small amount can make a big difference.**"

In 2010, he and two other researchers modeled the **effects of soot injected into the atmosphere from 1,000 private suborbital flights a year and found that they could increase temperatures over the poles by 1.8 degrees Fahrenheit (1 degree Celsius) and reduce polar sea ice levels by 5% to 15%.**

### Contention 3: Space Debris

#### There are currently thousands of pieces of space debris orbiting Earth, and each launch adds more.

**Sutter 2016**

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**There are over 20,000 known** and tracked **pieces of space debris orbiting Earth, each** one **traveling** at **about 15,000 mph** (24,000 km/h). **They pose a risk to future space missions**, and [nobody is bothering to clean it up](https://www.space.com/space-junk-removal-is-not-going-smoothly). Why? Because it's too hard.

**In the** early **1960s**, **the U.S. military** wanted to devise a new way of communicating with its forces around the globe. If an enemy severed undersea cables, they could only rely on bouncing radio signals off of the [ionosphere](https://www.space.com/ionosphere.html), which was an unreliable method. The Cold War-era solution? A program called Project West Ford, a plan to **launch 480 million tiny slivers of copper needles into space**, giving Earth an artificial ionosphere and a reliable way to communicate.

After the first batch was successfully launched, however, **the program was canceled**. One reason was the accelerated development of communications [satellites](https://www.space.com/24839-satellites.html). The other was that **everyone realized** that **sending** countless bits of random **junk into space was** probably **a bad idea.**

#### An increase in space junk leads to the Kessler Syndrome

**Wall 21**

(Michael Wall is a Senior Space Writer with [Space.com](http://space.com/) and joined the team in 2010. He has a Ph.D. in evolutionary biology from the University of Sydney, Australia, a bachelor's degree from the University of Arizona, and a graduate certificate in science writing from the University of California, Santa Cruz. “Kessler Syndrome and the space debris problem”, November 15, 2021. https://www.space.com/kessler-syndrome-space-debris)

**The Kessler Syndrome is** a phenomenon in which **the amount of junk in orbit around Earth reaches a point where it just creates more and more** [**space debris**](https://www.space.com/16518-space-junk.html)**, causing big problems for satellites, astronauts and mission planners.**

**Consider this** scenario: **The destruction of a** dead spy **satellite spawns a swarm of debris in Earth orbit, which wreaks ever-increasing havoc as it zooms around our planet.**

**The cloud destroys** a number of **communications satellites, generating more** and more **debris** with every violent collision**. It takes out the** iconic[**Hubble Space Telescope**](https://www.space.com/15892-hubble-space-telescope.html) **and a NASA space shuttle, killing several crewmembers** aboard the winged vehicle. It **then** lines **the** International Space Station **(ISS)** up in its crosshairs, **destroying the $100 billion orbiting lab with a hail of fast-flying shrapnel.**

 International Space Station

#### Impact: An increase in private launches leads to the Kessler Syndrome, which leads to global warming in three ways.

**Witt 21**

<https://earthsky.org/human-world/kessler-syndrome-colliding-satellites/>

November 15 2021

Kelly Kizer Whitt has been a science writer specializing in astronomy for more than two decades. She began her career at Astronomy Magazine, and she has made regular contributions to AstronomyToday and the Sierra Club, among other outlets. Her children’s picture book, Solar System Forecast, was published in 2012. She has also written a young adult dystopian novel titled A Different Sky. When she is not reading or writing about astronomy and staring up at the stars, she enjoys traveling to the national parks, creating crossword puzzles, running, tennis, and paddleboarding. Kelly lives with her family in Wisconsin.

On Monday, **November 15, 2021**, the **astronauts on the International Space Station took shelter from** possible **incoming space debris in their return vehicles.** The UK-based company [Seradata](https://twitter.com/seradata), which produces a launch and satellite database, said it suspected **the debris is the result of a Russian anti-satellite missile test** that might have destroyed the [Kosmos 1408](https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=1982-092A) satellite. Later in the day, NASA administrator Bill Nelson confirmed the debris’ origin in a [statement](https://www.nasa.gov/press-release/nasa-administrator-statement-on-russian-asat-test), saying it resulted from a: … destructive Russian Anti-Satellite (ASAT) test. NASA [said](https://www.nasa.gov/press-release/nasa-administrator-statement-on-russian-asat-test) of the event: **The crew was awakened and directed to close the hatches to radial modules on the station**, including Columbus, Kibo, the Permanent Multipurpose Module, Bigelow Expandable Activity Module, and Quest Joint Airlock. Hatches between the U.S. and Russian segments remain open.

**An additional precautionary measure of sheltering the crew was executed for two passes through** or near the vicinity of **the debris cloud**. The crew members made their way into their spacecraft shortly before 2 a.m. EST and remained there until about 4 a.m. **The space station is passing through or near the cloud every 90 minutes**, but the need to shelter for only the second and third passes of the event was based on a risk assessment made by the debris office and ballistics specialists at NASA’s Johnson Space Center in Houston. While the crew has returned to the space station for now, some modules remained closed as a precaution. **The** [**U.S. Space Command**](https://www.spacecom.mil/#/) **is working to** learn more and will **notify countries to maneuver their satellites out of harm’s way** if necessary. **All of this points to** what’s called **the** [**Kessler syndrome**](https://en.wikipedia.org/wiki/Kessler_syndrome), first predicted in 1978. It’s **the idea that collisions between objects in Earth-orbit generate space debris; that debris then collides further, creating yet more debris and further collision … and so on in a cascade effect.** More about that below. The U.S. State Department confirms and condemns that Russia conducted an anti-satellite weapon (ASAT) test in low Earth orbit. **This comes on the heels of** another event last **Wednesday, November 10, when the International Space Station had to** [**dodge space debris**](https://news.yahoo.com/international-space-station-swerved-narrowly-120524863.html) **in order to avoid a collision. Russia’s space agency saved the station from damage by changing the space station’s orbit** by about 0.7 miles (1.1 km). The maneuver allowed them to avoid the remains of a weather satellite that China destroyed during a missile test in 2007. **Low-Earth orbit is crowded** with satellites, and thousands more are scheduled for launch in the next couple of years, **bringing us dangerously close to the possibility of** runaway collisions called **the Kessler syndrome.**

As early as 1978, NASA scientist [Donald Kessler](https://en.wikipedia.org/wiki/Donald_J._Kessler) was pondering what would happen as more satellites took up residence in orbit around Earth. He authored a paper, along with Burton G. Cour-Palais, that the *Journal of Geophysical Research* [published](https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/JA083iA06p02637) on June 1, 1978. They theorized that **as the number of artificial satellites increased in Earth’s orbit, so would the probability of collisions between the satellites, until eventually Earth might be saddled with a belt of debris.** This theory of a coming cascade of collisions is now known as the Kessler syndrome, and **we are closer than ever to that future becoming a reality**. What is the Kessler Syndrome? Kessler syndrome: A scenario in which the density of objects in low-Earth orbit is high enough that collisions between objects cause a cascade, with each collision generating space debris that increases the likelihood of further collisions. The Soviet Union launched the first satellite, Sputnik 1, into space in 1957. **By 1990, there were** [**464 active satellites**](https://www.statista.com/statistics/897719/number-of-active-satellites-by-year/) **around Earth. In 2020, there were 3,368 active satellites and nearly as many non-active satellites. Within the next three to four years, SpaceX alone plans to launch around 65,000 Starlink satellites. And other private companies such as OneWeb and countries like China have satellites planned** also. Kessler Syndrome in Action. **Collisions** between manmade objects in space [**have already happened**](https://www.esa.int/Safety_Security/Space_Debris/New_ESA-UNOOSA_debris_infographics_and_podcast)**.** For example, **in 1996, debris** from an Ariane rocket that launched to space in 1986 **hit the** [**Cerise satellite**](https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=1995-033B)**. The debris floated around Earth’s orbit for a decade before its destructive collision.** **In 2006, an operating satellite and defunct satellite collided at 26,000 miles an hour** (11.7 km/s). The objects, once numbered at two, suddenly **{and} became 2,300 fragments of debris** that the Department of Defense’s global Space Surveillance Network ([SSN](https://www.nasa.gov/mission_pages/station/news/orbital_debris.html)) must monitor.

The Space Surveillance Network tracks objects down to 2 inches (5 cm) in size in low-Earth orbit. It tracks objects about 1 yard (1 m) in diameter for those in [geosynchronous orbit](https://en.wikipedia.org/wiki/Geosynchronous_orbit). Any objects 4 inches (10 cm) or larger that are on a collision course with a satellite, etc., require collision avoidance maneuvers. Sometimes the monitors don’t identify the threat quickly enough to perform an avoidance maneuver, and, in the case of the International Space Station, more drastic steps result. The crew in the space station must retreat to their “lifeboats,” the modules that would take them back to Earth in case of serious damage to the station.

Animation of Space Debris The [European Space Agency](https://www.esa.int/Safety_Security/Hubble_s_impactful_life_alongside_space_debris) created the video above, which shows a visualization of how much space debris is orbiting Earth at a size of greater than 1 meter (1 yard), then greater than 10 centimeters (4 inches), followed by greater than 1 centimeter (.6 inch), and finally all debris greater than 1 millimeter (.04 inch). The video is from **{In} 2019**. At that time, the number of orbiting space **debris at greater than 1 meter was about 5,400 objects**. Approximately **34,000 objects were larger than 10 centimeters** (which includes 2,000 active satellites). There were **900,000 objects greater than 1 centimeter and 130 million objects greater than 1 millimeter.** The colors in the video denote what category each object is in. Red is for functioning and nonfunctioning satellites, yellow is rocket bodies, green are objects from space missions (covers, caps, etc.) and blue represents fragments. Deorbiting creates debris **Quickly deorbiting defunct satellites would** help **lessen the crowding in low-Earth orbit, but** that comes with its own drawbacks. **When satellites burn up in our atmosphere, they contribute pollution in the form of metals.** Space rocks composed of various metals impact our atmosphere every day, delivering elements such as iron, nickel and aluminum. But what will the effect be when large amounts of satellites that have reached the end of their lives deorbit and put up to 14 tons of aluminum in the atmosphere every day? Ethan Siegel at [The Big Think](https://bigthink.com/starts-with-a-bang/astronomers-night-sky/) explained that **satellites will contribute up to 30 times the naturally occurring amount of aluminum**. He said **that** aluminum **can have a number of impacts on Earth, including**:

* the additional seeding of clouds
* **changes to Earth’s reflectivity and heat-trapping properties**
* **the destruction of stratospheric ozone molecules**
* **disruption of atmospheric circulation at a variety of altitudes**

Space is for all of us The addition of untold numbers of satellites into Earth orbit affects much more than just the chance that collisions will make areas of space unusable. They affect our view of the night sky.

[Samantha Lawler](https://www.uregina.ca/science/physics/people/faculty-research/samantha-lawler/index.html) of the University of Regina in Canada estimated that, within a few years, [every 16th “star” we see in the night sky might be a satellite](https://earthsky.org/space/satellites-versus-stars-night-sky-kessler-syndrome/). On Twitter, [Carolyn Porco](https://www.spacescience.org/about_ssi/staff/porco.html), planetary scientist and leader of the Cassini Imaging Science team, [said](https://twitter.com/carolynporco/status/1458255133372870656):

**The night sky belongs to all of us, it’s important for its significance to our sense of place and meaning, and it needs to be preserved.**

Bottom line: As ISS astronauts took shelter in return vehicles on November 15, 2021, the Kessler syndrome begins to feel like a foregone conclusion. NASA scientist Donald Kessler developed the theory in 1978, in which he described how a high density of satellites in low-Earth orbit might trigger a self-sustaining cascade of collisions.