#### Their fear of meaningless “information overload” replicates Victorian fear of the telegraph – it’s not radical but ahistoric – we should use debate to channel overflow into specific, deeply researched advocacies-turns armchair DA

Paré ‘4(Jacinthe, “The Importance of the Dull in Information Overload”, MA Thesis @ Concordia University, Montreal, pp. 105-112)

\*otaku: obsessive information collectors (i.e., anime people)

Neither man's mental limits at inputing and absorbing information, nor (post)modern Information societies' communication output rate are likely to change much. The critics who fear information overload and the spreading of meaninglessness and boredom are justifiably concerned, but as changes in society are often misunderstood, it may just be that a different perspective is needed to deal with the circumstance that is information overload. As Tom Standage reminds us in *The Telegraph: The Victorian Internet* (1998), history repeats; we just tend to forget about it. The same vocabulary and hype now surrounding the Internet and the new technologies of information were utilized at the arrival of the telegraph more than a hundred years ago: a revolution of communication; concerns over having to deal with an overload of information; anxiety over the survival of the more serious information sources, such as newspapers and books; the deploring of people's seeming preference for the newer and the faster over reasoning and tradition; the appearance of new jargon and worrisome subcultures, etc. Despite these apparent 'dangers', culture and society have not only emerged safe and sound from the emergence of the telegraph, but also enhanced by the experience that an increased availability of information brought about. And so in today's Information societies, where information, facts and data appear to be in overabundance and 'out of control' once again, individuals need not avoid exposure to the media out of fear of overload, nor dwell on nostalgic memories of times past, when things supposedly meant so much more. There is no need to fear information overload, nor its Midas touch that is, in the eyes of information critics, transforming to dull all in its path. In fact, while so much of the Information society's media landscape is said to be 'infested' with meaningless data, a quick look around reveals that most people are in fact not reduced to apathy and boredom by the information provided by the popular media in general. This thesis has exposed various reactions to information overload. There are those who strive to keep up with as much of it as possible: they wish to keep the sprawl of data under control in their archives, they want to keep up to date and be 'in the know' of the latest facts. However, as I have discussed, the accompanying stress and the impossibility of really knowing everything show the futility of such sweeping attempts. Then there are those who have chosen to block much of the data overload out of their lives, either out of pure confusion or unwillingness to keep abreast of the informational tide. Yet this 'blocking out' risks causing a loss of social connection or meaning, apathy and chronic boredom, all of which can be of no good for the continuing of society. Otaku have chosen a third option in dealing with data overload in their lives, one that strangely but successfully combines both attitudes: they choose to have it all, but only of very specific topic. They beat the stress of facing 'too much' data by only focusing on a very small section of the world, but one through which he can be confident to hold under his absolute control. They neatly forgo boredom by choosing only those topics that are of interest to them personally, not ones dictated by others or by social pressures. Moreover, with many of their subjects already so dull, how can they fail but to be reinvested with potential, with interest and with a renewed purpose as they are included in the new order of Otaku's peculiar collections? The seemingly useless boring does not have to lead to passivity, apathy and boredom, as was demonstrated with the case of the Japanese Otaku. Certainly, they are not victims of information overload, of the 'system' or of a meaningless postmodern society. They are not all runaways, or lonely, sad souls "unable to deal with reality, [...] spen[ding] their days engrossed in big-eyed childlike female fantasies or big explosions" {Dinsmore), an image that some like to perpetuate. Faced with the onslaught, Otaku have not "reclined" (Kroker 161) nor are they languidly absorbing all the "lifeless secretions" of the media (Baudrillard "Cool Memories" 97). They instead have taken an active stance, one that does not reject involvement. The Otaku knows that the only way out of the mess is to go all the way through; holding nothing back, he has mutated his sensibilities into non-linear ones, which allows him to deal with a variety of tiny details, despite the apparent lack of coherence, order or social meaningfulness. The Otaku speak to and from their cultural moment, both willing consumers and active agents within the overload of information that surrounds them. They truly embody the possibility of positively living with media and without meaning in a postmodern society (Grassmuck "Otaku" 219). That there no longer seems to be (that is, if there ever was) a consensus to point at what the values of a particular society are (Niedzviecki 70) or to "give reliable reference points by which people can locate themselves socially, realize themselves sentimentally and declare (to themselves and others) who they are" (Klapp "Collective Search" viii), doesn't mean that media users are a hopelessly lost bunch, confused by an onslaught of disjointed data. The case of the Otaku demonstrates that it is possible to reclaim the scattered, supposedly useless data and to go on amidst the overload by giving it new purpose. At worse, the Otaku's antisocial obsession with tiny details comforts him and provides him with solace whereas real relationships can't; at best, it helps him achieve a sense of control in a world full of chaos. Otaku create coherence in a small section of the world - coherence that is scarcely to be had elsewhere. They succeed in returning pattern and order, significance and meaningfulness in the chaos of the informational world that surrounds them. Some will argue that the extreme individualism and peculiar interests of subcultural groups such as Otaku can only cause more divergence in opinion and spread even more useless data in a world where there already is too much information, and that such attitudes cannot logically help regain control of the situation that is information overload. That may be the case. But what are the other solutions if we cannot even begin by choosing what interests US, truly and personally? If people don't care, they need not bother getting involved at all. If they do, why not become overly involved like the Otaku? It is but a first step which allows one to get into the mess of information media, and beat the torpidness it is engendering by creating one's own informational spaces, a space where one would hope to find meaning once again. If the critics whine that there is too much, that it all means little, the Otaku have shown that there is a way through and out of the mess. They have regained a sense of identity within the artificial abundance of mass culture; they have created meaningful informational spaces that suit them and their close-circled community and that provide them with a sense of accomplishment and pride, even if in a non-traditional way. Despite different motives and moral condemnation Otaku are subjected to, their strategies represent relatively successful ways of coping with the challenges of the times1.

**Meaning is possible and participation in politics is inevitable – the aff conflates existing conditions with meaning per se**

**Robinson 4.** Andy, Zizek hater, Baudrillard, Zizek and Laclau on "common sense" - a critique, http://andyrobinsontheoryblog.blogspot.com/2004/11/baudrillard-zizek-and-laclau-on-common.html

**Baudrillard thinks his account of the masses is confirmed by disinterest in politics** and "public" debates (12-13), **and that this is a resistance to political manipulation** (SSM 39). He is wrong. This **disinterest is relative**: **at the time of The Consumer Society, Baudrillard still recognised that this disinterest can be shattered by sudden uprisings.** Further, it is quite possible to explain such disinterest without falling back on the crude kind of theories of mystification Baudrillard cites as the only alternative to his view (SSM 12-13). Brinton, and Albert and Hahnel, for instance, have analysed disinterest as an insulation built into authoritarian character-structures which enables people to cope with capitalism. Baudrillard's earlier work similarly involves a model of how the consumer society produces disinterest. Furthermore, **political manipulation is,** as Gramsci and others show, closely **intertwined with the supposedly "meaningless", "apolitical" discourses of everyday life**. **It is simply not possible to withdraw from politics; one always participates in practices which influence social outcomes** and others' actions, **so that the illusion of withdrawal from politics is actually a naturalisation of a particular kind of political system**. Baudrillard's explicitly stated view that everyday practice is beyond representation and the politics (SSM 39) is therefore wholly mistaken and leads him to effectively endorse the naturalisation of politics (even though he tries to avoid ENDORSING something he sees as meaningless and therefore not endorsable - 40-1. Actually he does endorse indirectly via loaded language). He also misses the dimension of political INTRUSION into everyday life - for instance, the aggressive police presence which blights so many inner-city communities, and the linked phenomenon of a politicised fear of "crime". At this point, in contradiction to Vaneigem, Reich and Foucault as well as his earlier work**, Baudrillard also wants to deny a liberatory potential to resistance in everyday life** (SSM 40-1).¶ **Baudrillard sometimes substitutes his own views for evidence, as when he discusses what "we" the audience experience** (GW 39). ¶ Baudrillard's claim that the masses are "dumb", silent and conduct any and all beliefs (SSM 28) and "the reversion of any social" (SSM 49) is problematised by the persistence of subcultures and countercultures, while his claim that any remark could be attributed to the masses (SSM 29) hardly proves that it lacks its own demands or beliefs. **He is leaping far too quickly from the confused and contradictory nature of mass beliefs to the idea that the masses lack - or even reject - meaning per se. He wants to portray the masses as disinterested in meaning, instinctual and "above and beyond all meaning"** (SSM 11), **lacking even conformist beliefs** (87-8) **and without a language of their own** (22). **This is contradicted by extensive evidence on the construction of meaning in everyday life**, from Hoggart **on working class culture to** Becker, Lemert, Goffman **and others on deviance.** Even in **the sphere of media effects, the evidence from research on audiences, such a**s Ang on Dallas viewers and Morley on the Nationwide audience, **suggests an active construction of meaning by members of the masses, negotiating with or even opposing dominant codes of meaning**. **This may well show a decline of that kind of meaning promoted by the status quo** - but it hardly shows a rejection of meaning per se. When the masses act stupid, it may well be due to what radical education theorists term "reactive stupidity" - an adaptive response to avoid being falsified and "beaten" by acting stupid. **Baudrillard again wrongly conflates the dominant system with meaning as such**. Indeed, **Baudrillard seems to have changed his mind AGAIN by the time of the Gulf War essays, when he refers to the MEDIA, not the masses, as in contro**l (GW 75), and to stupidity as a result of "mental deterrence" (GW 67-8), which produces a "suffocating atmosphere of deception and stupidity" (GW 68) and a control through the violence of consensus (GW 84).

**Anti-war advocacy disproves their baseless assertions about communication**

**Berinsky 7.** Adam J., professor of political science at the Massachusetts Institute of Technology, “Assuming the Costs of War: Events, Elites, and American Public Support for Military Conflict,” Journal of Politics, Volume 69, Issue 4, pages 975–997, November 2007

Many political scientists and policymakers argue that unmediated events—the successes and failures on the battlefield—determine whether the mass public will support military excursions. The public supports war, the story goes, if the benefits of action outweigh the costs of conflict. Other **scholars contend that the balance of elite discourse influences public support for war. I draw upon survey evidence from World War II and the** current **war in Iraq to come to a common conclusion regarding public support for international interventions**. I find little evidence that citizens make complex cost/benefit calculations when evaluating military action. Instead, **I find that patterns of elite conflict shape opinion concerning war. When political elites disagree as to the wisdom of intervention, the public divides as well. But when elites come to a common interpretation of a political reality, the public gives them great latitude to wage war.**¶ In recent years, a charitable view of the mass public has emerged in the public opinion and foreign policy literature. Increasingly, scholars have attributed “rationality” to public opinion concerning war. Many political scientists and policymakers argue that unmediated events—the successes and failures on the battlefield—determine whether the mass public will support military excursions. The public supports war, the story goes, if the benefits of action outweigh the costs of conflict and should therefore have a place at the policymaking table.¶ In this paper, I argue that military events may shape public opinion, but not in the straightforward manner posited by most scholars of public opinion and war. I draw upon and expand the work of scholars who contend that the balance of elite discourse influences levels of public support for war. **Integrating research on heuristics and shortcuts with information-based theories of political choice, I demonstrate that** patterns of conflict among partisan political actors shape mass opinion on war. It is not the direct influence of wartime events on individual citizens' decisions that determines public opinion, as “event response” theories of war support claim. Instead, consistent with the “elite cue” theory I advance in this paper, **the nature of conflict among political elites concerning the salience and meaning of those events determines if the public will rally to war.** To a significant degree **citizens determine their positions on war by listening to trusted sources**—

### Cap- we are impact turning transition

#### Empirics conclude revolution is structurally impossible – no working class support, capitalist opposition, and results in tyranny or reversion to capitalism

Calnitsky 21 [Dr. David Calnitsky 21, Assistant Professor in the Department of Sociology at Western University, Sociology PhD from the University of Wisconsin-Madison, 8/8/2021, “The Policy Road to Socialism,” Critical Sociology, Sage Online] Recut Jet

* Workers don’t want it
* Loss aversion phenomenon means workers err on capitalism
* Capitalists hate socialism so they would fight against it
* Current government replaced by tyranny
* If its democratic, they vote back into capitalism

I do not, however, think that the revolutionary road is implausible. Rather, it is impossible, at least inside the rich capitalist democracies. And between the implausible and the impossible the choice is clear. Again, this can be framed as an empirical hypothesis: You do not see revolutions in developed capitalist democracies. As Przeworski and Limongi (1997) have written, there has never been a revolution in a moderately middle-class democracy (see also Przeworski, 2019). Drawing on a thousand years of data, cumulatively collected across 37 democratic countries, they show that not one had collapsed with a per-capita GDP higher than that of Argentina in 1976. Among countries with half that figure, collapse was exceedingly rare. Even a modest GDP brings with it an enormous amount of regime stability. These data in fact include any kind of regime collapse; narrowing the data to socialist revolution makes the empirical case against it even more impressive. Any case for revolution must begin by acknowledging rather than ignoring this evidence. To look at this question in a different way, I draw on the Cross-National Time-Series Data Archive, which contains information on revolutions (rather than government collapse) for over 200 countries since 1919. Their definition of revolution is very broad (see footnote 7) and includes “attempts” to overthrow government as well as “unsuccessful” rebellions. The data were compiled from newspaper sources and warrants caution, but nonetheless constitutes the most systematic evidence available for these questions. In Figure 9, I present the GNP per capita distribution of revolutions, from 1919, where GNP is first available, to the present. By considering only those country-years with revolutions I reduce the observation count from 17,520 to 184. Unlike Przeworski, I do not further restrict the data to democracies. The graph displays an extreme skew: The vast, overwhelming majority of cases of revolutionary threat occur in countries with a per capita GNP below $5,000 USD. For reference, the figure for the US in the data is about $65,850 in 2019. The hypothesis above—that we do not see revolutions in developed democracies—seems borne out by the evidence. figure Figure 9. Histogram of country-years with revolutions. Source: Cross-National Time-Series Data Archive. Data drawn from 200 plus countries between 1919 and 2018 are then restricted to country-years (N = 184) in which there were “revolutions,” as well as a “major government crisis” and “anti-government protests.” Why exactly is this true and what are the mechanisms to explain it? Why is the revolutionary strategy impossible for a country like the US? There are, at bottom, three reasons, each of which stands alone as a sufficient condition to snap the last threads of one’s revolutionary faith.23 The first two suggest that revolution is unachievable, and the last suggests that even if it is achievable, socialism by revolutionary means is unachievable. The revolutionary road is closed on the following grounds: (1) Workers do not want it (2) Capitalists would sooner grant reforms (3) A smashed state is more likely to result in tyranny than deep democracy Not only has there never been a successful revolution in a developed democracy, there has never been a working class that has wanted one (e.g. Erikson and Tedin, 2015; Sassoon, 1996).24 There are no clear cases where the dominant inclination of the working class in a developed democracy was revolutionary. Recall that the above graph also includes attempts and unsuccessful cases. It is self-evident that workers have not joined revolutionary groups en masse at any point in the context of a rich democracy. Nor were their aspirations to join such groups thwarted by violence or ideology. When gains inside a capitalist democracy are available—either individual or collective ones, and this has been true even through the neoliberal period, where median living standards have continued to (slowly) go up and not down—it is not worth risking everything for an uncertain future (Thewissen et al., 2015).25 More important than the dynamic point is the static one: When standards of living are moderately high, as shown in Figure 9, the modal worker has more to lose than her chains. This is not an argument against socialism; but to revise Werner Sombart, the life raft of revolution really was shipwrecked on shoals of roast beef and apple pie. Therefore, the reasons workers are not revolutionary are materialist in character. Explaining their reformist politics does not require appeal to venal trade union leaders or false consciousness. Most people wish to minimize risk in their lives, and revolution involves taking on colossal risks. For example, home-ownership in the developed world hovers around 70%; this means that a lot of people have a lot to lose. By contrast, the materialist case for revolution proposes that people favor it when their expected post-revolutionary standards of living are greater than their current standard (Roemer, 1985). But when we add moderate risk- and loss-aversion the calculation changes (Kahneman and Tversky, 1991). Say you have a low income, but own a few assets, maybe a house, a car, and perhaps you also have a child; what risk profile would you require to gamble your modest holdings for an uncertain future which might be better but might be worse? Even if you are certain that the probability of better is greater than the probability of worse, you have to envision workers as a class of inveterate gamblers to take the bet. Moderately cautious people who prefer a bird in the hand will still view the downside risk as too great. Equal gains and losses are not experienced equally. This is the loss aversion phenomenon. But the assumption of a population confident about improved standards of living—and a willingness to take risky strategies to achieve them—is itself unwarranted. This is the risk aversion phenomenon. The modal worker is of course correct to suspect that her post-revolutionary welfare is uncertain; socialists after all do not have satisfactory answers to the problems of coordination, motivation, and innovation under socialism (for attempted answers that are provocative and oftentimes brilliant, see Albert, 2004; Cottrell and Cockshott, 1992; Corneo, 2017; Roemer, 1994; and Wright and Hahnel, 2016). When one compares the status quo to a future where both heaven and hell are seemingly plausible, it is perfectly rational that people everywhere would abandon the barricades. And abandon them they did. Now perhaps the revolutionaries have persuaded us that negative outcomes are far-fetched, that we are very confident that revolution will usher in, eventually, the land of milk and honey. It is still the case that in this model the promised land will only be reached after a social breakdown of unknown duration: A complete overhaul in the organization of production will lead to some middle period of deteriorating material welfare as capitalists rapidly exit the economy. This means chaos and uncertainty, but it could also mean war. The interregnum could last a year, but it might last two decades, and however optimistic we are about the end point, we cannot in advance know how long this interim phase will persist. In the meantime, revolutionary enthusiasm will wane, erstwhile supporters will decamp, a “stay-the-course” electoral strategy will be outflanked by competitor parties promising a return to normalcy, and the desire to consolidate gains will make the authoritarian impulse greater. From a materialist perspective, the uncertain passage through what Przeworski (1986) calls the “transition trough” makes the journey less appealing.26 To my mind, these factors explain why all working classes in all developed democracies have been decidedly reformist in orientation. The reason why revolutionary socialism has always been marginal in rich capitalist economies—and will always be outflanked by reform-oriented socialism—is that only the latter consistently deliver high (and usually increasing) standards of living and low (and usually decreasing) levels of risk. As long as the Mad Max world of catastrophic collapse can be avoided, reform-oriented parties will always better capture the enthusiasm of poor and working people. Thus, when we try to explain the non-revolutionary attitudes of our working-class friends and family, we do not need to lean on the false consciousness account, for there is a more parsimonious materialist explanation. As such, any case for revolution must be non-materialist in character: You can be a materialist or a revolutionary, but not both. This is the dilemma the revolutionaries must consider: Revolution is only possible when the forces of production are underdeveloped, but it can only be successful when they are sufficiently developed to make socialism (or communism) objectively viable.27 As Elster (1986) has argued, the circumstances under which revolutions spark and succeed never coincide. What about the capitalists? Under these circumstances, it is reasonable to expect that they will fight far harder against a revolution than they would against reformist drives. Indeed, ignoring the response from capitalists violates Elster’s first law of political rationality: Never assume your opponent is less rational than you. If revolution were the alternative, employers would grant every imaginable reform, from far higher taxes to the rejiggering of power relations in the workplace. In a mugging, most people will surrender their wallet before their life. Actors in the state ought to respond in more or less the same way—that is, as long as you admit your adversary the competence to read the situation as well as you. If our theory of the state suggests that it acts on behalf of the capitalist class, its apparatchiks would anticipate and preempt any revolutionary crusade with a cocktail of concession and repression. And while it will certainly contest reforms, it will devote all of its resources to break the revolution. Nonetheless, this means that revolutionaries can play a crucial role, even if it is not to foment revolution. Militancy is a powerful strategy to foment reform (for an argument about the history of social democracy along these lines, see Piketty, 2014). Thus far, the main reason revolution is off the table is because no one wants it—not workers, nor employers, nor the state. The third point above asks us to imagine the prospects for revolutionary success even if we ignore the wrinkle that workers have neither an interest nor capacity to make it. But let us pretend they did: Why then would we imagine that total social breakdown would prompt a deepening of democracy rather than authoritarian entrenchment? This happy outcome has never before emerged in the wake of social collapse, and there is little reason why the final showdown with the American military ought to produce fertile ground for deepening democracy in all spheres of life. In fact, evidence from the General Social Survey suggests that in response to recession and economic downturn people tend to become less altruistic and less concerned with questions of fairness.28 After situations of economic crisis, voters tend to shift to the right (Lindvall, 2014). The old union song cries out that “we can bring to birth a new world from the ashes of the old,” but life is not birthed on ash. None of the historical case studies track this narrative, and indeed everything we know about human psychology suggests that social devastation makes people more, not less, prone to demagoguery. This means that even if a revolution were achievable, it is probably undesirable. The argument I have thus far laid out against revolution contends only that it is off the table in middle-class democracies. I have in mind social dynamics within developed capitalist democracies, countries “like the US,” but the premise no longer holds true if we imagine a society that has already suffered some sort of catastrophic societal disintegration—at that point all bets are off. We are of course now talking about a world we are not living in, but it is worth considering the thought experiment nonetheless. It is possible that America, after some world-historic environmental or economic collapse, begins to look something more like Russian feudalism than contemporary developed capitalism. Revolution then might again be on the table, but the context of desperation and scarcity in this scenario gives little reason to expect it would incubate an egalitarian democratic society. The historical evidence is unambiguous: None of the communist revolutions of the 20th century ushered in deeply democratic egalitarian social structures. Not only are there no examples, but there are also no clear mechanisms on offer. The fact that this scenario generates an interest in bringing about an egalitarian society by means of revolution does not mean there will be a capacity to do so. The theory is little more than “where there is a will there is a way.” But, as Elster (1980: 124) argues, the general interests of society do not secrete the conditions for their fulfillment. Interests and capacities need not overlap. There is a final reason to be skeptical of non-evolutionary strategies: The highly dubious premise that the system we erect the morning after will actually work. A socialist economy, if plopped down tomorrow, would be so rife with unintended consequences and pathologies that it is easy to imagine a democracy voting its way back into capitalism. This is true even if we believe (mistakenly, in my view) that the socialist calculation debate is solvable in the age of big data (Morozov, 2019). Interlocutors in the calculation debate have had very little to say about the politics of transition. Indeed, it is hard to imagine success of any kind without a slow and incremental transformation, experimenting with bits and pieces along the way—as we have been doing for the past century. An experimental approach is likely the only way to avoid devastating blunders that undermine the whole project. Moments of institutional upheaval and big change may at times be necessary, but to be successful they will have to rest on a foundation of smaller changes that have been tested.

#### Capitalism causes dematerialization which solves sustainability questions

Zitelmann 21 – studied history and political sciences, graduating with a doctorate “summa cum laude” in 1986. His dissertation was published in both German and English: Hitler. The Policies of Seduction. Rainer Zitelmann began his career lecturing history at the Freie Universität Berlin from 1987 to 1992. He then became chief editor at one of the leading and most prestigious publishing houses in Germany, Ullstein-Propyläen. He followed this with the role of section editor at the major German daily newspaper “Die Welt”, which he held until 2000. (Rainer, "Consumption Presumption: Are Human Beings Destroying the World?," National Interest, 2-12-2021, https://nationalinterest.org/feature/consumption-presumption-are-human-beings-destroying-world-178114, Accessed 3-8-2021, LASA-SC) Recut Jet

Some people claim that we need to cut our consumption or there will be no hope for the planet. Such claims are based on the thesis that continued growth increases the rate at which the earth’s finite resources are consumed and, moreover, leads to irreversible climate change. And such warnings are by no means new. In 1970, for instance, the Club of Rome attracted a great deal of attention with the publication of The Limits to Growth. A Report for the Club of Rome’s Project on the Predicament of Mankind, which has to date sold more than thirty million copies in thirty languages. The book warned people to change their ways and had a clear message: the world’s raw materials, and in particular, oil would soon be used up. In twenty years, the scientists predicted, we would have used the very last drop of oil. Of course, the Club of Rome’s models for the depletion of oil—and almost all other major raw materials—were wrong. According to the scenarios presented in The Limits to Growth, we should now be living on a planet that has been devoid of natural gas, copper, lead, aluminum and tungsten for decades. And we were supposed to have run out of silver in 1985. Despite the bleak forecasts, as of January 2020, the United States Geological Survey estimated silver reserves worldwide at 560,000 tons. Employing an extensive array of data, the American scientist Andrew McAfee proves in his book More from Less that economic growth is no longer coupled to the consumption of raw materials. Data for the United States, for example, show that of seventy-two resources, from aluminum to zinc, only six are not yet post-peak. Nevertheless, despite the fact that the U.S. economy has grown strongly in recent years, consumption of many commodities is actually decreasing. Back in 2015, the American environmental scientist Jesse Ausubel wrote an essay, “The Return of Nature: How Technology Liberates the Environment,” showing that Americans are consuming fewer and fewer raw materials per capita. Total consumption of steel, copper, fertilizer, wood and paper, which had previously always risen in line with economic growth, had plateaued and was now in constant decline. Such across-the-board reductions in natural resource consumption are only possible because of much-maligned capitalism: companies are constantly developing more efficient production methods and reducing the amount of raw materials they consume. Of course, they are not doing this primarily to protect the environment but to cut costs. What's more, a constant stream of innovations has promoted the trend of miniaturization or dematerialization. Just think of your smartphone. How many devices has your smartphone replaced and how many raw materials did they use to consume? Nowadays, many people no longer have a fax machine or street atlas because they have everything they need on their smartphone. Some even use their phones instead of a wristwatch. You used to need four separate microphones in your telephone, cassette recorder, Dictaphone and video camera, today you just need one—in your smartphone. The finite nature of the world’s natural resources is one argument against growth, climate change is another. Let’s take China as an example: China currently emits more CO2 than any other country in the world and is building a number of new nuclear power plants in order to achieve carbon neutrality by 2060. With the new build program well underway, China’s first new-generation nuclear power plant recently went into operation. In the very near future, China intends to start exporting power plants. The latest generation of nuclear power plants is much safer than earlier models—and can play a pivotal role in the fight against climate change. In the United States, Joe Biden is already evaluating the advantages of small modular reactor (SMR) nuclear power plants. As the name suggests, SMRs are smaller than traditional nuclear fission reactors and offer a maximum capacity of three hundred megawatts. In the United Kingdom, for example, a consortium led by Rolls-Royce has announced plans to build up to sixteen SMR power plants. So far, two reactors of this type are in operation, both onboard the floating nuclear power plant “Akademik Lomonosov, which supplies heat and electricity to the Siberian city of Pevec and its one hundred thousand inhabitants. Anticapitalists blame capitalism for resource consumption and climate change. But political decisions—such as Germany’s decision to phase out nuclear energy—frequently have a negative impact on climate change. Telling people to cut their consumption must seem like pure mockery to the hundreds of millions of people around the world who are still living in extreme poverty. What they need is more capitalism and economic growth. Just like in China, where the number of people living in extreme poverty has fallen from 88 percent in 1981 to less than 1 percent today. Andrew McAfee’s book has an optimistic message about how we don't have to turn back the clocks and cut our consumption: capitalism and technological progress are allowing us to steward the world’s resources, rather than stripping them bare.

#### Capitalism solves war – its anti-imperialist.-answers cap fails ev

Mousseau 19, Michael. "The end of war: How a robust marketplace and liberal hegemony are leading to perpetual world peace." International Security 44.1 (2019): 160-196. Props to DML for finding. (Professor in the School of Politics, Security, and International Affairs at the University of Central Florida)//Elmer

Is war becoming obsolete? There is wide agreement among scholars that war has been in sharp decline since the defeat of the Axis powers in 1945, even as there is little agreement as to its cause.1 Realists reject the idea that this trend will continue, citing states' concerns with the “security dilemma”: that is, in anarchy states must assume that any state that can attack will; therefore, power equals threat, and changes in relative power result in conflict and war.2 Discussing the rise of China, Graham Allison calls this condition “Thucydides's Trap,” a reference to the ancient Greek's claim that Sparta's fear of Athens' growing power led to the Peloponnesian War.3 This article argues that there is no Thucydides Trap in international politics. Rather, the world is moving rapidly toward permanent peace, possibly in our lifetime. Drawing on economic norms theory,4 I show that what sometimes appears to be a Thucydides Trap may instead be a function of factors strictly internal to states and that these factors vary among them. In brief, leaders of states with advanced market-oriented economies have foremost interests in the principle of self-determination for all states, large and small, as the foundation for a robust global marketplace. War among these states, even making preparations for war, is not possible, because they are in a natural alliance to preserve and protect the global order. In contrast, leaders of states with weak internal markets have little interest in the global marketplace; they pursue wealth not through commerce, but through wars of expansion and demands for tribute. For these states, power equals threat, and therefore they tend to balance against the power of all states. Fearing stronger states, however, minor powers with weak internal markets tend to constrain their expansionist inclinations and, for security reasons, bandwagon with the relatively benign market-oriented powers. I argue that this liberal global hierarchy is unwittingly but systematically buttressing states' embrace of market norms and values that, if left uninterrupted, is likely to culminate in permanent world peace, perhaps even something close to harmony. My argument challenges the realist assertion that great powers are engaged in a timeless competition over global leadership, because hegemony cannot exist among great powers with weak markets; these inherently expansionist states live in constant fear and therefore normally balance against the strongest state and its allies.5 Hegemony can exist only among market-oriented powers, because only they care about global order. Yet, there can be no competition for leadership among market powers, because they always agree with the goal of their strongest member (currently the United States) to preserve and protect the global order

#### Causes mass death---only capitalism enables a peaceful solution to poverty.

Rainer Zitelmann 21. German historian and author of “The Rich in Public Opinion.” "Violence Is History’s Great Economic Leveler." National Interest. 6-30-2021. https://nationalinterest.org/feature/violence-history%E2%80%99s-great-economic-leveler-188974

Another question that is all too rarely asked is: What would be the price of eliminating inequality? In 2017, the renowned Stanford historian and scholar of ancient history Walter Scheidel presented an impressive historical analysis of this question: The Great Leveler: Violence and the History of Inequality from the Stone Age to the Twenty-First Century. He concludes that societies that have been spared mass violence and catastrophes have never experienced substantial reductions in inequality.

Substantial reductions in inequality have only ever been achieved as the result of violent shocks, primarily consisting of war, revolution, state failure and systems collapse, and plague.

According to Scheidel, the greatest levelers of the twentieth century did not include peaceful social reforms, they were the two world wars and the communist revolutions. More than 100 million people died in each of the two world wars and in the communist social experiments.

Total War as a Great Leveler

World War II serves as Scheidel’s strongest example of “total war” leveling. Take Japan: In 1938, the wealthiest 1 percent of the population received 19.9 percent of all reported income before taxes and transfers. Within the next seven years, their share dropped by two-thirds, all the way down to 6.4 percent. More than half of this loss was incurred by the richest tenth of that top bracket: their income share collapsed from 9.2 percent to 1.9 percent in the same period, a decline by almost four-fifths. The declared real value of the income of the largest 1 percent of estates in Japan’s population fell by 90 percent between 1936 and 1945 and by almost 97 percent between 1936 to 1949. The top 0.1 percent of all estates lost even more during this period, 93 and 98 percent, respectively. During this period, the Japanese economic system was transformed as state intervention gradually created a planned economy that preserved only a facade of free-market capitalism. Executive bonuses were capped, rental income was fixed by the authorities, and between 1935 and 1943 the top income tax rate in Japan doubled.

Significant leveling also took place in other countries during wartime. According to Scheidel’s analysis, the two world wars were among the greatest levelers in history. The average percentage drop of top income shares in countries that actively fought in World War II as frontline states was 31 percent of the prewar level. This is a robust finding because the sample consists of a dozen countries. The only two countries in which inequality increased during this period were also those farthest from the major theaters of war (Argentina and South Africa).

Low savings rates and depressed asset prices, physical destruction and the loss of foreign assets, inflation and progressive taxation, rent and price controls, and nationalization all contributed in varying degrees to equalization. The wealth of the rich was dramatically reduced in the two world wars, whether countries lost or won, suffered occupation during or after the war, were democracies or run by autocratic regimes.

The economic consequences of the two world wars were, therefore, devastating for the rich—a fact that stands in direct opposition to the thesis that it was capitalists that instigated the wars in pursuit of their own economic interests. Contrary to the popular perception that the lower classes suffered most in the wars, in economic terms it was the capitalists who were the biggest losers.

Incidentally, the left-wing economist Thomas Piketty comes to a similar conclusion. In his book Capital in the Twenty-First Century, he argues that progressive taxation in the twentieth century was primarily a product of the two world wars and not of democracy.

Poverty is Eliminated Peacefully

The price of reducing inequality has thus usually involved violent shocks and catastrophes, whose victims have been not only the rich but millions and millions of people. Neither nonviolent land reforms nor economic crises nor democratization has had as great a leveling effect throughout recorded history as these violent upheavals. If the goal is to distribute income and wealth more equally, says historian Scheidel, then we simply cannot close our eyes to the violent ruptures that have so often proved necessary to achieve that goal. We must ask ourselves whether humanity has ever succeeded in equalizing the distribution of wealth without considerable violence. Analyzing thousands of years of human history, Scheidel’s answer is no. This may be a depressing finding for many adherents of egalitarian ideas.

However, if we shift perspective, and ask not “How do we reduce inequality?” but “How do we reduce poverty?” then we can provide an optimistic answer: Not violent ruptures of the kind that led to reductions of inequality, but very peaceful mechanisms, namely innovations and growth, brought about by the forces of capitalism, have led to the greatest declines in poverty. Or, to put it another way: The greatest “levelers” in history have been violent events such as wars, revolutions, state and systems collapses, and pandemics, but the greatest poverty reducer in history has been capitalism. Before capitalism came into being, most of the world’s population was living in extreme poverty—in 1820, the rate stood at 90 percent. Today, it’s down to less than 10 percent. And the most remarkable aspect of all this progress is that, in the recent decades since the end of communism in China and other countries, the decline in poverty has accelerated to a pace unmatched in any previous period of human history. In 1981, the rate was still 42.7 percent; by 2000, it had fallen to 27.8 percent, and in 2021 it was only 9.3 percent.

## Plan

#### Plan – The appropriation of outer space through the production of space debris by private entities is unjust.

#### Revising the Outer Space Treaty clarifies legal loopholes and ambiguities in space debris – scope of modification below.

* Private entities: Non-governmental
* Space debris: Non-functional Space Objects

Shah 20. Sachin Shah is a write for Cornell Undergraduate Law and Society Review. 8/30/20 [CORNELL UNDERGRADUATE LAW & SOCIETY REVIEW “The International Legal Regulation of Space Debris,” <https://www.culsr.org/articles/the-international-legal-regulation-of-space-debris>] Justin

While many scholars agree that the Outer Space Treaty provides rudimentary regulation of the problem of space debris, therein lies the problem: it is only rudimentary. One of the most often cited problems with the Outer Space Treaty is that it was signed in 1967 (53 years ago) and that the technological climate of the space travel industry was not as advanced as it is today, reflected in a marked lack of specificity in the writing of these laws. [7] This lack of specificity highlights another issue: the imprecise language of the Treaty leaves unclear the definition of space debris, which leaves the regulation open to interpretation. Rather than agree with most scholars that space debris constitute “space objects,” scholar Chelsea Muñoz-Patchen uses the UN Space Debris Mitigation Guidelines’ definition of space debris along with the fact that space debris is non-functional and its ownership often untraceable in order to argue that space debris should be classified as “abandoned property” instead. [8] Furthermore, non-governmental private enterprises may be inclined to legally define space debris as something other than “space objects” in order to avoid the Outer Space Treaty’s aforementioned financial penalties, as will be explained below. The Outer Space Treaty also does not account for the fact that the space debris problem, especially as of late, has been becoming worse over time. As collisions between debris and satellites continue to occur, more debris is strewn across Earth’s orbit, endangering future spacecraft from safely orbiting Earth, supporting the theory of the Kessler Syndrome. [9] Thus, the Outer Space Treaty is not a very effective legal instrument with regards to mitigating the amount of space debris in orbit around Earth.

Due to the Treaty’s weakness, many of the aforementioned scholars support revising the Outer Space Treaty by clearly defining space debris, increasing its technology-specific language to combat space debris issues, and outlining specific punishments to negate the complete lack of enforcement built into the current Treaty. While nations do recognize the danger that space debris pose to orbital operations, stronger laws must be enacted in order to de-escalate an imminent arms race and incentivize them to mitigate their debris. [10] Believing that one convention or treaty would be insufficient, N. Jasentuliyana recommends the creation of a regulatory regime to solve the growing problem of space debris. Such a regime would “effectively deal with these technical problems and establish international legal rules, standards and procedures on a continuing basis.” [11] Thus, one potential solution to the legal lack of space debris mitigation is establishing a lawmaking agency which specifically focuses on the issue of space debris. In addition to the creation of a legal agency which could hold actors accountable for the amount of space debris produced, international laws guiding the actions of private companies’ activities may also provide an answer, as will be discussed in greater detail below.

Although there do exist international laws and regulations governing the use of space for states and governmental entities (albeit weak ones), the private enterprises sending objects into space are subject to even less stringent regulations than states are. SpaceX, for example, to authorize their sending of 42,000 Starlink satellites into orbit, only had to submit paperwork to the U.S. Federal Communications Commission (FCC) and the International Telecommunication Union (ITU). [12] Paul Larsen posits that, in the face of less stringent regulations, nongovernmental satellite companies send many satellites into orbit in order to maximize their profit, which is their primary objective. Unlike the vagueness and lack of enforcement that came with written law (which is apparent in the Outer Space Treaty), the unwritten market-oriented incentives for profit by large-scale satellite providers and operators provide a reason for actors to mitigate space debris in orbit around Earth. Larsen states that “They have huge sums of money invested in each satellite, perhaps as much as a half-billion dollars, when all costs are included. Loss of one satellite is a major event. They want their assets to be safe.” [13] Thus, these satellite companies have a major stake in space traffic management and their market incentives do a better job of mitigating space debris than the existing legal regulation does. The company SpaceX, as mentioned above, plans to send 42,000 satellites into space. While doing so would likely result in significant profits for the company, many believe this will diminish astronomical visibility as well as increase the chance of collisions with space debris. [14] Due to these effects, scientists and space law experts alike have called for a legal delay to the ITU’s decision on whether or not to accept SpaceX’s proposal to launch more satellites. If these parties are successful, a precedent-setting legal case regarding space debris mitigation and satellite use in space may well provide a solution to the outdated Outer Space Treaty of 1967.

#### The aff interprets OST enforcement as an OUF (Orbital Use Fee). That incentivizes remediation, removal, and mitigation efforts without harming the space industry. Any other countermeasures aren’t the silver bullet and fail.

Runnels 22. Michael is a professor and writer for the American Bar Association. 1/13/22. [American Bar Association “On Clearing Earth’s Orbital Debris & Enforcing the Outer Space Treaty in the U.S.” <https://www.americanbar.org/groups/business_law/publications/blt/2022/01/orbital-debris/>] Justin **\*\*OUF: Proportional fee for amount of debris put into Space**

A number of technological and regulatory solutions, such as active debris removal[119] and voluntary orbital debris mitigation guidelines,[120] are currently being explored by regulatory authorities.[121] While these efforts are important in ensuring the sustainable use of LEO orbits, they do not address the underlying incentive problem for satellite operators. Namely, they are incentivized to view both their orbital debris and the costs that it imposes on others as externalities.[122] As such, without the internalization of these externalities, efforts to fully address the orbital debris problem will likely be ineffective.[123] Notably, a National Academy of Sciences study found that orbital debris removal may worsen the economic damages from congestion by increasing incentives to launch.[124] As satellite operators are prohibited from securing exclusive property rights to orbital shells under the OST,[125] and are unlikely to recover economic damages resulting from orbital debris collisions under the Liability Convention,[126] prospective operators “face a choice between launching profitable satellites, thereby imposing current and future collision risk on others, or not launching and leaving those profits to competitors.”[127] This dynamic represents a classic tragedy of the commons problem.[128] However, under Article VI of the OST,[129] this problem can be partially solved through an OUF[130] levied by the FCC. The monies received from this fee would then be used to fund private orbital debris clearing projects[131] and research related to orbital debris removal.

Though such an OUF may be seen as an unreasonable growth restraint on the nascent space industry,[132] a Pew study found that in the case of nearly a dozen industries, the costs of implementing new regulations were less than estimated while the economic benefits were greater than estimated.[133] Moreover, these regulations did not significantly impede the economic competitiveness of the industry.[134] An OUF consistent with what this article proposes would even the playing field for commercial-satellite operators in a manner consistent with OST principles[135] and, as OneWeb’s founder argued, while “thoughtful, common-sense rules” likely increase operating costs for commercial-satellite operators, they protect the environment and ensure that the U.S. commercial satellite industry continues to grow.[136] While the U.S. cannot address the issue of reducing orbital debris on its own, it can make a substantial contribution through demonstrating responsible orbital debris mitigation measures, such as those advocated in this article.

In support of the aforementioned OST language,[137] this article’s second proposed amendment to Title 51 of United States Code would read:

Title 51, of the United States Code, is further amended by adding at the end the following:

CHAPTER 802—ADMINISTRATIVE PROVISIONS RELATED TO CERTIFICATION AND PERMITTING

§ 802XX. Orbital use fee purpose

The Administrator, in conjunction with the heads of other Federal agencies, shall take steps to fund orbital debris removal projects, technologies, and research that will enable the Administration to decrease the risks associated with orbital debris.

§ 802XX. Administrative authority

In order to carry out the responsibilities specified in this subtitle, the Secretary may impose an orbital use fee for the placement of objects in low Earth orbits on a nongovernmental entity holder of, or applicant for:

(1) a certification under chapter 801; or

(2) a permit under chapter 802.

V. Conclusion

The OST establishes space as the “province of all mankind”[138] and promotes its peaceful use and exploration for the “benefit and in the interests of all mankind.”[139] The OST further requires that “Parties to the Treaty … bear international responsibility for national activities in outer space … whether such activities are carried on by governmental agencies or by non-governmental entities,”[140] and requires that each “Party to the treaty … [be] internationally liable” for damages caused by an object launched into outer space.[141] Finally, the OST prohibits claims of “national appropriation” of both outer space and celestial bodies “by claim of sovereignty, by means of use or occupation, or by other means.”[142] The Space Act “facilitate[s] commercial exploration for and commercial recovery of space resources by [U.S.] citizens … ”[143] and exempts companies from regulatory oversight until 2023.[144] However, the FCC’s laissez-faire enforcement of satellite mega-constellation projects is arguably in violation of the OST[145] due to the saturation of these mega-constellations in LEO and their likely resulting orbital debris.[146]

#### Proportional fees solve industry startup problems and avoids the tragedy of the commons.

Lavars 20. Nick has been writing and editing at New Atlas for over five years, where he has covered everything from distant space probes to self-driving cars to oddball animal science, and everything in between. He previously spent time at The Conversation, Mashable and The Santiago Times, earning a Masters degree in communications from Melbourne’s RMIT University along the way. When not tapping away at his desk, you might find him traveling the world in search of the weird and wonderful. Failing that, he’ll probably be watching sport. 5/26/20. [New Atlas, “Could orbital fees force satellite operators to deal with space junk?,” <https://newatlas.com/space/orbital-fees-satellite-space-debris/#:~:text=The%20orbital%2Duse%20fee%20would,for%20the%20scheme%20to%20work>.] Justin

"That's not the same as a launch fee," Rao says, "Launch fees by themselves can't induce operators to deorbit their satellites when necessary, and it's not the launch but the orbiting satellite that causes the damage." The orbital-use fee would function like a carbon tax or fisheries management fees, with all countries launching and operating satellites needing to participate and charge the same fee per unit of collision risk for the scheme to work. It could function as a one-off payment or tradable permits, with the fee calculated to correlate with the cost to the industry of another satellite entering orbit, which demands more resources to reduce the collision risk. The fee could also be determined by the orbit the operator wishes to use, with different orbits carrying different risks of collision. "In our model, what matters is that satellite operators are paying the cost of the collision risk imposed on other operators," says Daniel Kaffine, professor of economics at the University of Colorado Boulder and co-author on the paper. As part of their study, the researchers also projected how the introduction of an orbital-use fee would impact the value of the satellite industry as a whole. Due to the reduction in collisions and associated costs, like replacing damaged satellites, for example, the team estimates the value of the industry would increase from US$600 billion to around $3 trillion. In line with this and the rising value of cleaner orbits, the fee would also increase. The team found the optimal rate of rise to be 14 percent per year, meaning the fee would equate to around $235,000 per satellite, per year, by 2040. "In other sectors, addressing the Tragedy of the Commons has often been a game of catch-up with substantial social costs,” says co-author Matthew Burgess from the University of Colorado Boulder. “But the relatively young space industry can avoid these costs before they escalate.”

### 1AC – Adv – Debris

#### The advantage is debris:

#### Massive satellite development incoming and cascades debris – lack of regulations raises the risk and turns any reason satellites are good.

Hattenbach 19. Jan Hattenbach sat down with Stijn Lemmens, Senior Space Debris Mitigation Analyst at the European Space Agency (ESA) in Darmstadt, Germany, to talk about how Starlink plays into the space junk problem. 6/3/19. [Sky Telescope, “DOES STARLINK POSE A SPACE DEBRIS THREAT? AN EXPERT ANSWERS,” <https://skyandtelescope.org/astronomy-news/starlink-space-debris/>] Justin

Jan Hattenbach: The recent launch of the first 60 “Starlink” satellites has sparked outrage on social media. Some critics claim the “mega-constellation” of satellites by the U.S. company SpaceX will increase the risk of creating more space junk, even calling it a threat to space flight itself. What is your opinion — is this criticism justified or exaggerated?

Web around the worldWhen up and running Starlink will provide internet access to locations across the planet. SpaceX

Stijn Lemmens: We're talking about a constellation that — if it ever comes to full fruition — would include up to 12,000 members. Several nations have launched almost 9,000 satellites over the past six decades. Of these, about 5,000 are still in orbit. So we are talking about doubling the amount of traffic in space over a couple of years, or over a decade at most, compared to the last 60 years.

However, the space debris issue is mostly caused by the fact that we leave objects behind in orbit, which are then a target for collisions either with fragments of a previous collision event or with big, intact objects. Currently, most space debris comes from explosive break-up events; in the future, we predict collisions will be the driver. It's like a cascade event: Once you have one collision, other satellites are at risk for further collisions.

Over the past two decades, there has been a lot of effort to establish guidelines and codes of conduct. For low-Earth orbit (LEO), there is a well-known guideline to take out your spacecraft, satellite, or launch vehicle upper stage, within 25 years after the end of mission.

To have a reasonable shot at having a stable space environment, the goal is to have at least 90% of the satellites and launch-vehicle upper stages with lifetimes longer than 25 years take themselves out of orbit, or put themselves into orbits with lifetimes less than 25 years.

However, we are not really good at doing this at the moment. We’re talking about success rates of 5% to 15% for satellites (launch vehicle orbital stages do notably better, with success rates of 40-70% in low-Earth orbit). Already with current traffic, we have reasonable concerns that we're creating a real debris issue out there.

If we're now thinking about putting another couple of thousands of satellites up there, with levels of compliance similar to what we've been doing so far, then we're talking about a possible catastrophe.

Operators of any type of large satellite constellation would have to behave far better than most current actors in spaceflight have been doing. And this is the concern: Before you launch, operators can of course say and demonstrate that they are going to comply with all international norms and guidelines. But it's only after launch that we know how responsible their behavior actually was.

JH: Do you have the impression that SpaceX is aware of their responsibility?

SL: They are certainly aware of the problem. For example, to get a license to launch in the U.S. with a mission like theirs, where they are exchanging data between the mainland, space, and other operators, you need to request a license, in this case from the Federal Communications Commission (FCC). To obtain this license, they must demonstrate what they will do with respect to space debris mitigation. So they needed to demonstrate a certain adherence to the norms.

But the real question is whether the current norms are actually sufficient for large constellations, or if we are putting the bar too low with respect to future sustainability. We are talking about thousands of new satellites — the risk is that the cumulative effect is not captured in the current level of guidelines. So SpaceX would have to voluntarily demonstrate higher levels of commitment.

JH: When asked about these issues, SpaceX responded that they believe they have the “most advanced system” for space debris mitigation, e.g. that the Starlink satellites are “designed to be capable of fully autonomous collision avoidance – meaning zero humans in the loop.” Are you confident that such a system will work, especially considering the numbers?

SL: I have no technical visibility on how they implement their system, so I cannot make a judgment if it will work with their satellites or not. What I can say is that it will require a certain improvement on the current state-of-the-art. On the other hand, if a pair of Starlink satellites does collide within the operation orbit, SpaceX will be the first one who will be badly affected by the fragmentation cloud the collision generates. It's in their own best interest to make sure their system works.

JH: You mentioned the launch license issued by the FCC, which is a federal commission of the United States. However, space is not the property of the U.S. or any other country. Is there an international body that has a say in these matters?

SL: Five outer space treaties, established in the 1960s, 70s and 80s, do not mention space debris. Instead, there is a lot of coordination, first of all on the agency level. The Inter-agency Space Debris Coordination Committee coordinates 13 of the world's space agencies, including the ESA, NASA, the China National Space Administration, and Russia’s Roscosmos,to come up with debris mitigation guidelines, share best practices, and try to address the problem in a way that makes sense to everyone. The United Nations Committee on the Peaceful Uses of Outer Space has taken on these guidelines . This committee includes politicians from many countries, including those not currently flying in space. Industries in many countries likewise discuss these issues within the International Organization for Standardization.

So there is a lot of coordination internationally to make sure that we play by the same rules and implement the same set of standards. But right now there is no way to directly interface with any nation's sovereignty over what it launches — the outer space treaties make nation states responsible for the behavior of their individuals or private companies.

#### Democratization of technology spurs rapid development – feedback loops ensures debris cascades

BERNAT 20. Pawel @ Military University of Aviation. 11/4/20. [SAFETY ENGINEERING OF ANTHROPOGENIC OBJECTS, “ORBITAL SATELLITE CONSTELLATIONS AND THE GROWING THREAT OF KESSLER SYNDROME IN THE LOWER EARTH ORBIT,” Volume 4, PDF] Justin

The second decade of the 21st century has brought a dynamic and somewhat surprising development of the space industry. Since 1972 – the Apollo 17 crew mission to the Moon, the humankind has not left the safe environment of Earth’s orbit, and for years the global space sector has been progressing in slow but steady pace run by a few largest space agencies like American NASA, European ESA, Japanese JAXA, and Chinese CNSA. The most significant achievement of the “old ways” of managing outer space exploration is the International Space Stations (ISS) that has facilitated more than 20 years of continuous crewed operations.

The situation started to change at the turn of the century when new generations of private entrepreneurs began to invest in and develop space technologies like rocket boosters, spaceships, and what most important for the subject of the paper – satellites and their constellations. This new shift is known among the space industry as “Space 2.0”, and its emergence is dated around 2000-2002 when the companies like SpaceX, Blue Origin, and Virgin Galactic were established. (Pyle, 2019). The real change, however, came in 2012 when the first SpaceX commercial mission was successfully launched to the ISS (NASA, 2012).

Since then, the participation of the private sector in the space industry has skyrocketed, especially in the United States. Today, SpaceX is the only entity that provides reusable rockets (first stage and fairings) that is capable of vertical launch and landing. Their current flagship rocket – Falcon 9 has carried out 23 successful missions in 2020 (SpaceX, 2020) and another four are planned for December of that year (Weitering, 2020). Moreover, thanks to Crew Dragon spaceship developed by the company, Americans have regained this year the capacity of sending astronauts from their own soil after nine years of buying the seats on Russian Soyuz capsule. SpaceX is now in the process of building a communication satellites constellation that will be addressed and analyzed in the paper.

Nowadays, in the space industry, we witness a very productive cybernetic feedback look between the development of space technologies, the democratization of those technologies, and a substantial reduction of prices. The latter is even more significant if we compare the cost of launching cargo into orbit now and 20 years ago – Falcon 9 is over ten times cheaper than Space Shuttle (Jones, 2018). This, of course, directly translates into the mass and number of objects that we are able to put in the orbit viably. Once the constellations consisting of thousands of satellites were unthinkable, but in the current environment, they become a reality.

Space 2.0 also has brought new threats and challenges in the sphere of national and international security. The increase in launch capacity, among other factors, has led to progressive militarization and weaponization of space and new arms race (Bernat, 2019), which has also contributed to the growing numbers of orbiting objects.

The goal of the paper is to present the argumentation that the threat posed by the cascading collisions in the Earth’s orbit (Kessler syndrome) is becoming more severe due to the construction of orbital satellite constellations; the threat that presents a real danger for people during their EVAs and orbital infrastructure, which may bare immediate consequences for safety and security systems on Earth. In order to provide the theoretical context for the above claim, the following issues will be presented and discussed: (1) space debris, (2) the Kessler syndrome, (3) orbital debris models, (4) the legal issues related to space debris and mitigation actions against their proliferation, and (5) the planned and being currently developed orbital satellite constellations and how they contribute to the growing threat of the Kessler syndrome.

#### Privatization drive rivalries and exponentially increases debris – lack of regulations spikes it.

BERNAT 20. Pawel @ Military University of Aviation. 11/4/20. [SAFETY ENGINEERING OF ANTHROPOGENIC OBJECTS, “ORBITAL SATELLITE CONSTELLATIONS AND THE GROWING THREAT OF KESSLER SYNDROME IN THE LOWER EARTH ORBIT,” Volume 4, PDF] Justin

5. Orbital satellite constellations and the growing threat of the Kessler syndrome

Space 2.0 – the new era of space exploration that we witness now in the 21st century means, in words of Buzz Aldrin, “moving human enterprise into space” (Pyle, 2019, p. xiv). The process of commercialization of outer space has already begun and is not limited to private companies providing technologies and services for national or international space agencies, as it was in the past. On the contrary, private companies from the space sector have now matured to carry out their own independent projects.

As for 2020, SpaceX is a company that serves as the best example – it launches satellites to the orbit, both for state and private contractors, it successfully realized two crew missions to the International Space Station, and is in the process of constructing Starlink satellite constellation that will provide high-speed internet access across the planet.

Each satellite weighs around 260 kg, is equipped with an ion propulsion system, autonomous collision avoidance system, and orbits Earth at approximately 540-560 km altitude (Starlink, 2020). At the beginning of November 2020, more than 860 Starlink satellites were orbiting the Earth (Jewett, 2020). Immediate plans include launching 12,000 satellites, but they assume a potential later extension to 42,000 (Henry, 2019a). Of course, SpaceX has employed, at least declaratively, all necessary measures to keep the space clean – the satellites are equipped with the deorbiting system, and in the event of inoperability of the propulsion system (Starlink, 2020). The orbital collisions are, however, inevitable. As it was shown before, the possibility of collisions grows with the number of orbital objects. Bastida Virgili with the team compared (2016, p. 154-155) orbital debris environment development without and with a large hypothetical constellation consisting of merely 1080 satellites, distributed across 20 orbital planes at 1,100 km altitude (Fig. 5).

Chart, line chart

Description automatically generated

Figure 5. Comparison of long term evolution of the number of objects in LEO with and without the constellation (Virgili et al., 2016, p. 155)

It has to be noted that although SpaceX’s Starlink is the only constellation that is being built in orbit, it is not the only one planned. There are at least a few initiatives aiming at the same goal – to construct internet infrastructure at the Earth’s orbit. The planned Kuiper Systems LLC, which is a subsidiary of Amazon and intends to place 3,236 broadband satellites in the LEO, is one of Starlink’s biggest competitors (Henry, 2019b). Now, there is even a rivalry between the two companies because Kuiper’s lowest orbital shell is planned to be 590 km, with a tolerance of 9 km either above or below (Cao, 2020), which is the altitude of Starlink satellites. Moreover, the race for space in orbit is now at the beginning.

The outer space is vast. It increasingly becomes more cluttered with both operational satellites and space debris. The threat of collisions increases and no institution or body has enough power to license, coordinate and regulate what is sent to the orbit. The UNOOSA has not such power. National states decide what the companies from the space industry can launch to space. In the United States, which is most advanced in the area of private constellations, it is the Federal Aviation Administration (FAA) that issues the appropriate approvals. The race to put broadband internet satellites bears similarities to the gold rush – there are no rules, at the global level, apart from first-come, first-served.

#### Models are rigorous—inserted below.

Virgili et al. 16. Bastida, J.C. Dolado, H.G. Lewis, J. Radtke, H. Krag, B. Revelin, C. Cazaux b , C. Colombo, R. Crowther, M. Metz. 4/26/16. [Act Astranautica “Risk to space sustainability from large constellations of satellites,” <https://sci-hub.se/10.1016/j.actaastro.2016.03.034>.] Justin

1.3. Simulation approach and result analysis A Monte Carlo (MC) approach was used to simulate the evolution of the object population over a period of 200 years under different post-mission disposal requirements, with four different tools (MEDEE – Modelling the Evolution of Debris on Earth's Environment [9], LUCA – Long Term Utility for Collision Analysis [10], DAMAGE – Debris Analysis and Monitoring Architecture to the Geosynchronous Environment [11] and DELTA – Debris Environment Long Term Analysis [12]). For analysis purposes, the effective number of objects was used where the contribution to the population by each object was weighted by the proportion of the orbital period spent in LEO. In a first step, four different evolutionary models performed an analysis of two reference scenarios. One scenario considered only the evolution of the background population and non-constellation traffic. The second scenario augmented the first with the addition of the representative constellation, with the requirement that 90% of the constellation satellites achieved post-mission disposal to orbits with remaining lifetimes of 25 years. The manoeuvres performed at the mission end to meet the disposal requirement are assumed to be impulsive (i.e. instantaneous) and result in an eccentric orbit with the apogee near the original (constellation) altitude and the perigee at an altitude such that the effects of atmospheric drag would cause the orbit to decay within 25 years. Two of the models considered an apogee remaining at the operational constellation altitude, while the other two reduced the apogee by 50 km. The purpose of these scenarios is to provide a cross-comparison of the models in terms of their predictions of the total object population, which take into account the effects of the constellation. As the distribution of the MC results for the models is of the same nature and the results are independent, a bootstrapping [20] approach is used to derive the mean, the standard deviation and the confidence levels at 95% of the combined results of all the MC runs from the four models (cf. Fig. 1), although not all the models performed the same number of MC runs (see Table 1). The main source of variation inside a particular model's MC runs included the randomness in collision activity, while the different models used their own solar activity forecast.

#### That drives a space arms race which enhances the risk of debris cascades, closes off space exploration, and causes conflict.

Shah 20. Sachin Shah is a write for Cornell Undergraduate Law and Society Review. 8/30/20 [CORNELL UNDERGRADUATE LAW & SOCIETY REVIEW “The International Legal Regulation of Space Debris,” <https://www.culsr.org/articles/the-international-legal-regulation-of-space-debris>] Justin

The body of legal regulations regarding the use of space (space being defined as the area above the jurisdiction of air law) by public and private entities is referred to as space law. Currently, there are only about five such regulations of space, the most significant of those being the United Nations’ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (hereinafter referred to as the Outer Space Treaty) of 1967. In this article, I would like to specifically describe and analyze the laws and regulations’ handling of the increasingly prevalent issue of space debris in orbit around Earth. The National Aeronautics and Space Administration (NASA) defines space debris as “any man-made object in orbit about the Earth which no longer serves a useful function.” [1] However, a major point of confusion discussed below is that the Outer Space Treaty does not explicitly define what it refers to as “space objects,” nor does it mention whether space debris are space objects. An excessive clustering of space debris is a problem for a few reasons. It may result in a phenomenon known as the Kessler Syndrome, in which there is a “cascade created when debris hits a space object, creating new debris and setting off a chain reaction of collisions that eventually closes off entire orbits.” [2] This endangerment of Earth’s future ability to explore extraterrestrial planets and life must be avoided at all costs. Furthermore, space debris in orbit around Earth limits the amount of available space for satellites to orbit, which may result in the Tragedy of the Commons: multiple actors will aggressively vie, in an arms race, for their right to space as it is a limited resource. [3] Space debris is thus a potentially pressing issue in our increasingly technological world. In this essay, I will analyze the existing regulation of space debris as outlined in the Outer Space Treaty, point out the issues with these regulations of space debris and discuss potential solutions, and, finally, discuss legal considerations for private enterprises as well.

#### Satellites solves the grid and every extinction scenario.

Pellegrino & Stang 16. Massimo Pellegrino, Master’s Degree in Space Studies from ISU, with Gerald Stang, Senior Associate Analyst at the EUISS, holds BSc and MSc degrees in chemical engineering from the University of Saskatchewan and an MA in international affairs from the School of International and Public Affairs at Columbia University (“Space Security for Europe”, *EU Institute for Security Studies*, published July 2016, <https://www.iss.europa.eu/content/space-security-europe>, accessed 7-10-2019) bm

Modern societies are highly dependent on the continuous operation of critical infrastructure to ensure the provision of basic goods and services. They consist of assets, systems or parts thereof which are so vital, that their disruption would significantly impact the economy, national security, public health, safety, or social well-being. Examples of critical infrastructure include energy, water, food supply, communication, transportation, and waste processing systems. Space assets are so deeply embedded in developed economies that a day without fully functioning space capabilities would severely restrict or even endanger our lives.

Space systems are critical for running energy grids and telecommunication networks, border and maritime surveillance, crisis management and humanitarian operations, environmental and climate monitoring, verification of international treaties and arms control agreements, and the fight against organised crime and terrorism. Space assets also provide the technological backbone for other critical infrastructures. The synchronisation of power grids and telecommunication networks, for example, is heavily dependent on GNSS timing signals and any disruption would create a domino effect on other critical infrastructures (see Figure 5).

Satellites also play a central role in supporting defence systems and military operations. They are force multipliers that provide intelligence, surveillance, and reconnaissance (ISR) capabilities, as well as communication, navigation, positioning and timing signals. Armed forces do not only use their own space systems, but are also significant consumers of space services provided by private operators. In fact, about 90% of US military communications traffic passes through civilian satellites, many of which privately owned, rather than through dedicated systems designed to withstand attempted interruptions.1 The reliance of both civilian and military users on space systems therefore places them firmly in the area of critical infrastructure. Some critical space systems, such as the American GPS, are under foreign control, and the governments controlling those systems retain the authority to disrupt services, even for allies, in case of a national emergency. While the United States announced that it has no intention of ever intentionally degrading public GPS signals (also known as ‘Selective Availability’) and that the next generation of GPS satellites will not include this feature, other governments might still do so.2

These dependences engender new and growing vulnerabilities. Reliance on space is likely to increase further as space capabilities and services improve in diversity, quality and affordability. Close to 1,500 satellites with a launch mass of over 50 kg are expected to be launched over the next decade; an increase of 50% compared to 2005-2014. This estimate excludes both the expected proliferation of smaller satellites (such as CubeSats), but also the planned OneWeb and Steam mega-constellations for global internet broadband service. Advances in small satellite capabilities and in launch technology (e.g. SpaceX’s Falcon rocket family) have already lowered the cost of access to space. About 45% more CubeSats were launched in 2014 than in 2013 (130 vs. 91), accounting for 63% of all satellites launched3 . However, just as the reliance on space increases, so too do threats and vulnerabilities. Therefore, in order to realise the full potential of investments in space, critical space systems need to be adequately protected and the space environment properly managed.

#### Grid security is an impact filter.

Denkenberger 21 [David Denkenberger, Anders Sandberg, Ross John Tieman, and Joshua M. Pearce, \* assistant professor of mechanical engineering at University of Alaska Fairbanks, “Long-term cost-effectiveness of interventions for loss of electricity/industry compared to artificial general intelligence safety,” 2021, *European Journal of Futures Research*, Vol. 9, Issue 1, https://doi.org/10.1186/s40309-021-00178-z, EA]

Civilization relies on a network of highly interdependent critical infrastructure (CI) to provide basic necessities (water, food, shelter, basic goods), as well as complex items (computers, cars, space shuttles) and services (the internet, cloud computing, global supply chains), henceforth referred to as industry. Electricity and the electrical infrastructure that distributes it plays an important role within industry, providing a convenient means to distribute energy able to be converted into various forms of useful work. Electricity is one component of industry albeit a critical one. Industry provides the means to sustain advanced civilization structures and the citizens that inhabit them. These structures play a critical role in realizing various futures by allowing humanity to discover and utilize new resources, adapt to various environments, and resist natural stressors.

Though industry is capable of resisting small stressors, a sufficiently large event can precipitate cascading failure of CI systems, resulting in a collapse of industry. If one does not temporally discount the value of future people, the long-term future (thousands, millions, or even billions of years) could contain an astronomically large amount of value [18]. Events capable of curtailing the potential of civilization (existential risks, such as human extinction or an unrecoverable collapse) would prevent such futures from being achieved, implying reducing the likelihood of such events is of the utmost importance [100]. Reducing the prevalence of existential risks factors; events, systemic structures, or biases which increase the likelihood of extinction but do not cause extinction by themselves is also highly valuable. Complete collapse or degraded function of industry would drastically reduce humanity’s capacity to coordinate and deploy technology to prevent existential risks, representing an existential risk factor. Consequently, interventions preventing loss of industry, reducing the magnitude of impacts, or increasing speed of recovery could be extremely valuable.

Existential risk research is, by nature, future focused, requiring the investigation of events that have not yet occurred. Futures studies methodologies are often applied to uncover salient trends or events, and explore potential causal structures [54, 123]. Probabilistic modeling techniques can then be used to determine the likelihood of such events occurring, including adequate treatment of uncertainty [101]. The cost-effectiveness modeling approach outlined in this paper is an example of this, attempting to assess the marginal utility of losing industry interventions on improving the long-term future. This approach could guide future efforts to assess the relative cost-effectiveness of interventions for different risks, existential or otherwise. More practically, this research can inform prioritization efforts of industrialized countries by providing estimates of the cost of global industrial collapse, and the utility of resilience interventions. This is relevant to the European Union which has a highly industrialized economy, providing $2.3 Trillion USD of the $13.7 Trillion USD global total of value add manufacturing [122]. The EU has shifted toward a more proactive foresight approach about natural and man-made disasters, noting the importance of rare high-impact events, systemic risks, and converging trends requiring better data and forecasting to drive a more ambitious crisis management system [47]. Still, it is clear that most academic and institutional emphasis has been on “ordinary” rather than extreme disasters, and risks from industry to the public and environment rather than widespread failures of industrial services causing harm.

The integrated nature of the electric grid, which is based on centralized generation makes the entire system vulnerable to disruption.1 There are a number of anthropogenic and natural catastrophes that could result in regional-scale electrical grid failure, which would be expected to halt the majority of industries and machines in that area. A high-altitude electromagnetic pulse (HEMP) caused by a nuclear weapon could disable electricity over part of a continent [16, 48, 66, 93]. This could destroy the majority of electrical grid infrastructure, and as fossil fuel extraction and industry is reliant on electricity [49], industry would be disabled. Similarly, solar storms have destroyed electrical transformers connected to long transmission lines in the past [117]. The Carrington event in 1859 damaged telegraph lines, which was the only electrical infrastructure in existence at the time. It also caused Aurora Borealis that was visible in Cuba and Jamaica [70]. This could potentially disable electrical systems at high latitudes, which could represent 10% of electricity/industry globally. Though solar storms may last less than the 12 h that would be required to expose the entire earth with direct line of sight, the earth’s magnetic field lines redirect the storm to affect the opposite side of the earth [117]. Lastly, both physical [6, 8, 69, 89, 111] and cyber attacks [3, 63, 90, 96, 118, 128, 130] could also compromise electric grids. Physical attacks include traditional acts of terrorism such as bombing or sabotage [130] in addition to EMP attacks. Significant actors could scale up physical attacks, for example by using drones. A scenario could include terrorist groups hindering individual power plants [126], while a large adversary could undertake a similar operation physically to all plants and electrical grids in a region. Unfortunately, the traditional power grid infrastructure is simply incapable of withstanding intentional physical attacks [91]. Damage to the electric grid resulting in physical attack could be long lasting, as most traditional power plants operate with large transformers that are difficult to move and source. Custom rebuilt transformers require time for replacement ranging from months and even up to years [91]. For example, a relatively mild 2013 sniper attack on California’s Pacific Gas and Electric (PG&E) substation, which injured no one directly, was able to disable 17 transformers supplying power to Silicon Valley. Repairs and improvements cost PG&E roughly $100 million and lasted about a month [10, 102]. A coordinated attack with relatively simple technology (e.g., guns) could cause a regional electricity disruption. However, a high-tech attack could be even further widespread. The Pentagon reports spending roughly $100 million to repair cyber-related damages to the electric grid in 2009 [57]. There is also evidence that a computer virus caused an electrical outage in the Ukraine [56]. Unlike simplistic physical attacks, cyber attackers are capable of penetrating critical electric infrastructure from remote regions of the world, needing only communication pathways (e.g., the Internet or infected memory sticks) to install malware into the control systems of the electric power grid. For example, Stuxnet was a computer worm that destroyed Iranian centrifuges [73] to disable their nuclear industry. Many efforts are underway to harden the grid from such attacks [51, 63]. The U.S. Department of Homeland Security responded to ~ 200 cyber incidents in 2012 and 41% involved the electrical grid [103]. Nations routinely have made attempts to map current critical infrastructure for future navigation and control of the U.S. electrical system [57].

The electric grid in general is growing increasingly dependent upon the Internet and other network connections for data communication and monitoring systems [17, 112, 118, 127, 135]. Although this conveniently allows electrical suppliers management of systems, it increases the susceptibility of the grid to cyber-attack, through denial of webpage services to consumers, disruption to supervisory control and data acquisition (SCADA) operating systems, or sustained widespread power outages [3, 72, 118, 120]. Thus global or regional loss of the Internet could have similar implications.

#### Debris triggers miscalculated war.

Acton and McDonald 21. James M. Acton is co-director of the Nuclear Policy Program and holds the Jessica T. Mathews Chair at the Carnegie Endowment for International Peace. Thomas D. MacDonald is a fellow in the Nuclear Policy Program. 12/10/21. [Defense One, “Nuclear Command-and-Control Satellites Should Be Off Limits,” <https://www.defenseone.com/ideas/2021/12/nuclear-command-and-control-satellites-should-be-limits/187472/>] Justin

When Russia blew up an old satellite with a new missile on November 15, it created an expanding cloud of debris that will menace the outer space environment for years to come.

Hypersonic fragments from the collision with Moscow’s ground-launched, anti-satellite weapon risk destroying other satellites used for communications, meteorology, and agriculture. They even pose a danger to China’s Tiangong Space Station and the International Space Station, where personnel—including Russia’s own cosmonauts—were forced to don spacesuits and flee into their escape capsules ahead of approaching debris.

But the greatest danger that this careless stunt highlighted is to a different potential target: high-altitude satellites used for nuclear command and control. Those critical satellites face the threat of being attacked by co-orbital anti-satellite weapons, that is, other spacecraft with offensive capabilities. Destroying a nuclear command-and-control satellite, even unintentionally, could lead a conventional conflict to escalate into a nuclear war. As such, the United States, China, and Russia have a shared interest in ensuring the security of each other’s high-altitude satellites.

Satellites are integral to the United States’ nuclear command-and-control system. They would be the preferred means to transmit a presidential order to use nuclear weapons and would provide the first warning of an incoming nuclear attack. Russia uses satellites for similar purposes, even if it appears not to rely on them quite as much as the United States. While little is publicly known about China’s nuclear command-and-control system, the U.S. Department of Defense has assessed that China is in the process of developing a space-based early-warning system.

The most important nuclear command-and-control satellites—those for communications and early warning—are located in high-altitude orbits. Fortunately, most are strung out about 22,500 miles above the equator—far above the debris from Russia’s ground-launched anti-satellite weapon test. These satellites, however, are growing more vulnerable, particularly to co-orbital anti-satellite weapons.

Nuclear command-and-control satellites might be attacked deliberately, as the prelude to a nuclear war. In a conventional conflict, if China, Russia, or the United States decided to use nuclear weapons first—or believed that its opponent was about to do so—it might try to degrade the adversary’s nuclear command-and-control system preemptively. China, for example, might attack U.S. early-warning satellites to weaken the United States’ homeland missile defenses. Conversely, the United States might target Chinese communication satellites to interfere with Beijing’s ability to wield its nuclear forces.

In a conventional war, however, nuclear command-and-control satellites might be attacked and threatened for altogether different reasons—creating the risk that nuclear war might be triggered inadvertently.

The United States, in particular, is deeply reliant on satellites to enable conventional operations. Moreover, most, if not all, nuclear command-and-control satellites also support nonnuclear missions—making them tempting targets even in a purely conventional conflict. For example, some U.S. satellites transmit orders to both U.S. conventional and nuclear forces. Russia might attack these satellites to try to undermine the United States’ ability to prosecute a conventional war, but with the added and unintended effect of degrading the U.S. nuclear command-and-control system.

Washington would be hard pressed to determine the intent behind such attacks. It could easily misinterpret them as preparations for a nuclear war and respond accordingly. It might threaten to use nuclear weapons unless its adversary backed off. In fact, the Trump administration’s nuclear policy explicitly threatened the use of nuclear weapons in precisely this circumstance. The Biden administration can and should remove this threat as part of its ongoing Nuclear Posture Review.

To make matters worse, it might not take actual attacks against nuclear command-and-control satellites to spark this kind of escalation. Satellites in high-altitude orbits are periodically moved to different positions to optimize their performance. Especially in a conventional conflict, a repositioning operation that led one spacecraft to approach a nuclear command-and-control satellite might appear to the latter’s owner as the beginning of an attack against its nuclear command-and-control system. Once again, the potential consequences could be catastrophic.

#### Any nuclear war causes extinction – ice age and famine.

Steven Starr 15 [Director of the University of Missouri’s Clinical Laboratory Science Program, as well as a senior scientist at the [Physicians for Social Responsibility](http://www.psr.org/). He has worked with the Swiss, Chilean, and Swedish governments in support of their efforts at the United Nations to eliminate thousands of high-alert, launch-ready U.S. and Russian nuclear weapons. “Nuclear War: An Unrecognized Mass Extinction Event Waiting To Happen.” Ratical. March 2015. <https://ratical.org/radiation/NuclearExtinction/StevenStarr022815.html>] TG

A war fought with 21st century strategic nuclear weapons would be more than just a great catastrophe in human history. If we allow it to happen, such a war would be a mass extinction event that [ends human history](https://ratical.org/radiation/NuclearExtinction/StarrNuclearWinterOct09.pdf). There is a profound difference between extinction and “an unprecedented disaster,” or even “the end of civilization,” because even after such an immense catastrophe, human life would go on.

But extinction, by definition, is an event of utter finality, and a nuclear war that could cause human extinction should really be considered as the ultimate criminal act. It certainly would be the crime to end all crimes.

The world’s leading climatologists now tell us that nuclear war threatens our continued existence as a species. Their studies predict that a large nuclear war, especially one fought with strategic nuclear weapons, would create [a post-war environment in which for many years it would be too cold and dark to even grow food](http://climate.envsci.rutgers.edu/pdf/RobockToonSAD.pdf). Their findings make it clear that not only humans, but most large animals and many other forms of complex life would likely vanish forever in a nuclear darkness of our own making.

The environmental consequences of nuclear war would attack the ecological support systems of life at every level. Radioactive fallout, produced not only by nuclear bombs, but also by the destruction of nuclear power plants and their spent fuel pools, would poison the biosphere. Millions of tons of smoke would act to [destroy Earth’s protective ozone layer](https://www2.ucar.edu/atmosnews/just-published/3995/nuclear-war-and-ultraviolet-radiation) and block most sunlight from reaching Earth’s surface, creating Ice Age weather conditions that would last for decades.

Yet the political and military leaders who control nuclear weapons strictly avoid any direct public discussion of the consequences of nuclear war. They do so by arguing that nuclear weapons are not intended to be used, but only to deter.

Remarkably, the leaders of the Nuclear Weapon States have chosen to ignore the authoritative, long-standing scientific research done by the climatologists, research that predicts virtually any nuclear war, fought with even a fraction of the operational and deployed nuclear arsenals, will leave the Earth essentially uninhabitable.

## Framing

#### The standard is maximizing expected wellbeing. Pleasure and pain *are* intrinsic value and disvalue – everything else *regresses* – robust neuroscience.

Blum et al. 18 – Kenneth Blum, 1Department of Psychiatry, Boonshoft School of Medicine, Dayton VA Medical Center, Wright State University, Dayton, OH, USA 2Department of Psychiatry, McKnight Brain Institute, University of Florida College of Medicine, Gainesville, FL, USA 3Department of Psychiatry and Behavioral Sciences, Keck Medicine University of Southern California, Los Angeles, CA, USA 4Division of Applied Clinical Research & Education, Dominion Diagnostics, LLC, North Kingstown, RI, USA 5Department of Precision Medicine, Geneus Health LLC, San Antonio, TX, USA 6Department of Addiction Research & Therapy, Nupathways Inc., Innsbrook, MO, USA 7Department of Clinical Neurology, Path Foundation, New York, NY, USA 8Division of Neuroscience-Based Addiction Therapy, The Shores Treatment & Recovery Center, Port Saint Lucie, FL, USA 9Institute of Psychology, Eötvös Loránd University, Budapest, Hungary 10Division of Addiction Research, Dominion Diagnostics, LLC. North Kingston, RI, USA 11Victory Nutrition International, Lederach, PA., USA 12National Human Genome Center at Howard University, Washington, DC., USA, Marjorie Gondré-Lewis, 12National Human Genome Center at Howard University, Washington, DC., USA 13Departments of Anatomy and Psychiatry, Howard University College of Medicine, Washington, DC US, Bruce Steinberg, 4Division of Applied Clinical Research & Education, Dominion Diagnostics, LLC, North Kingstown, RI, USA, Igor Elman, 15Department Psychiatry, Cooper University School of Medicine, Camden, NJ, USA, David Baron, 3Department of Psychiatry and Behavioral Sciences, Keck Medicine University of Southern California, Los Angeles, CA, USA, Edward J Modestino, 14Department of Psychology, Curry College, Milton, MA, USA, Rajendra D Badgaiyan, 15Department Psychiatry, Cooper University School of Medicine, Camden, NJ, USA, Mark S Gold 16Department of Psychiatry, Washington University, St. Louis, MO, USA, “Our evolved unique pleasure circuit makes humans different from apes: Reconsideration of data derived from animal studies”, U.S. Department of Veterans Affairs, 28 February 2018, accessed: 19 August 2020, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6446569/>, R.S.

**Pleasure** is not only one of the three primary reward functions but it also **defines reward.** As homeostasis explains the functions of only a limited number of rewards, the principal reason why particular stimuli, objects, events, situations, and activities are rewarding may be due to pleasure. This applies first of all to sex and to the primary homeostatic rewards of food and liquid and extends to money, taste, beauty, social encounters and nonmaterial, internally set, and intrinsic rewards. Pleasure, as the primary effect of rewards, drives the prime reward functions of learning, approach behavior, and decision making and provides the **basis for hedonic theories** of reward function. We are attracted by most rewards and exert intense efforts to obtain them, just because they are enjoyable [10]. Pleasure is a passive reaction that derives from the experience or prediction of reward and may lead to a long-lasting state of happiness. The word happiness is difficult to define. In fact, just obtaining physical pleasure may not be enough. One key to happiness involves a network of good friends. However, it is not obvious how the higher forms of satisfaction and pleasure are related to an ice cream cone, or to your team winning a sporting event. Recent multidisciplinary research, using both humans and detailed invasive brain analysis of animals has discovered some critical ways that the brain processes pleasure [14]. Pleasure as a hallmark of reward is sufficient for defining a reward, but it may not be necessary. A reward may generate positive learning and approach behavior simply because it contains substances that are essential for body function. When we are hungry, we may eat bad and unpleasant meals. A monkey who receives hundreds of small drops of water every morning in the laboratory is unlikely to feel a rush of pleasure every time it gets the 0.1 ml. Nevertheless, with these precautions in mind, we may define any stimulus, object, event, activity, or situation that has the potential to produce pleasure as a reward. In the context of reward deficiency or for disorders of addiction, homeostasis pursues pharmacological treatments: drugs to treat drug addiction, obesity, and other compulsive behaviors. The theory of allostasis suggests broader approaches - such as re-expanding the range of possible pleasures and providing opportunities to expend effort in their pursuit. [15]. It is noteworthy, the first animal studies eliciting approach behavior by electrical brain stimulation interpreted their findings as a discovery of the brain’s pleasure centers [16] which were later partly associated with midbrain dopamine neurons [17–19] despite the notorious difficulties of identifying emotions in animals. Evolutionary theories of pleasure: The love connection BO:D Charles Darwin and other biological scientists that have examined the biological evolution and its basic principles found various mechanisms that steer behavior and biological development. Besides their theory on natural selection, it was particularly the sexual selection process that gained significance in the latter context over the last century, especially when it comes to the question of what makes us “what we are,” i.e., human. However, the capacity to sexually select and evolve is not at all a human accomplishment alone or a sign of our uniqueness; yet, we humans, as it seems, are ingenious in fooling ourselves and others–when we are in love or desperately search for it. It is well established that modern biological theory conjectures that **organisms are** the **result of evolutionary competition.** In fact, Richard Dawkins stresses gene survival and propagation as the basic mechanism of life [20]. Only genes that lead to the fittest phenotype will make it. It is noteworthy that the phenotype is selected based on behavior that maximizes gene propagation. To do so, the phenotype must survive and generate offspring, and be better at it than its competitors. Thus, the ultimate, distal function of rewards is to increase evolutionary fitness by ensuring the survival of the organism and reproduction. It is agreed that learning, approach, economic decisions, and positive emotions are the proximal functions through which phenotypes obtain other necessary nutrients for survival, mating, and care for offspring. Behavioral reward functions have evolved to help individuals to survive and propagate their genes. Apparently, people need to live well and long enough to reproduce. Most would agree that homo-sapiens do so by ingesting the substances that make their bodies function properly. For this reason, foods and drinks are rewards. Additional rewards, including those used for economic exchanges, ensure sufficient palatable food and drink supply. Mating and gene propagation is supported by powerful sexual attraction. Additional properties, like body form, augment the chance to mate and nourish and defend offspring and are therefore also rewards. Care for offspring until they can reproduce themselves helps gene propagation and is rewarding; otherwise, many believe mating is useless. According to David E Comings, as any small edge will ultimately result in evolutionary advantage [21], additional reward mechanisms like novelty seeking and exploration widen the spectrum of available rewards and thus enhance the chance for survival, reproduction, and ultimate gene propagation. These functions may help us to obtain the benefits of distant rewards that are determined by our own interests and not immediately available in the environment. Thus the distal reward function in gene propagation and evolutionary fitness defines the proximal reward functions that we see in everyday behavior. That is why foods, drinks, mates, and offspring are rewarding. There have been theories linking pleasure as a required component of health benefits salutogenesis, (salugenesis). In essence, under these terms, pleasure is described as a state or feeling of happiness and satisfaction resulting from an experience that one enjoys. Regarding pleasure, it is a double-edged sword, on the one hand, it promotes positive feelings (like mindfulness) and even better cognition, possibly through the release of dopamine [22]. But on the other hand, pleasure simultaneously encourages addiction and other negative behaviors, i.e., motivational toxicity. It is a complex neurobiological phenomenon, relying on reward circuitry or limbic activity. It is important to realize that through the “Brain Reward Cascade” (BRC) endorphin and endogenous morphinergic mechanisms may play a role [23]. While natural rewards are essential for survival and appetitive motivation leading to beneficial biological behaviors like eating, sex, and reproduction, crucial social interactions seem to further facilitate the positive effects exerted by pleasurable experiences. Indeed, experimentation with addictive drugs is capable of directly acting on reward pathways and causing deterioration of these systems promoting hypodopaminergia [24]. Most would agree that pleasurable activities can stimulate personal growth and may help to induce healthy behavioral changes, including stress management [25]. The work of Esch and Stefano [26] concerning the link between compassion and love implicate the brain reward system, and pleasure induction suggests that social contact in general, i.e., love, attachment, and compassion, can be highly effective in stress reduction, survival, and overall health. Understanding the role of neurotransmission and pleasurable states both positive and negative have been adequately studied over many decades [26–37], but comparative anatomical and neurobiological function between animals and homo sapiens appear to be required and seem to be in an infancy stage. Finding happiness is different between apes and humans As stated earlier in this expert opinion one key to happiness involves a network of good friends [38]. However, it is not entirely clear exactly how the higher forms of satisfaction and pleasure are related to a sugar rush, winning a sports event or even sky diving, all of which augment dopamine release at the reward brain site. Recent multidisciplinary research, using both humans and detailed invasive brain analysis of animals has discovered some critical ways that the brain processes pleasure. Remarkably, there are pathways for ordinary liking and pleasure, which are limited in scope as described above in this commentary. However, there are **many brain regions**, often termed hot and cold spots, that significantly **modulate** (increase or decrease) our **pleasure or** even produce **the opposite** of pleasure— that is disgust and fear [39]. One specific region of the nucleus accumbens is organized like a computer keyboard, with particular stimulus triggers in rows— producing an increase and decrease of pleasure and disgust. Moreover, the cortex has unique roles in the cognitive evaluation of our feelings of pleasure [40]. Importantly, the interplay of these multiple triggers and the higher brain centers in the prefrontal cortex are very intricate and are just being uncovered. Desire and reward centers It is surprising that many different sources of pleasure activate the same circuits between the mesocorticolimbic regions (Figure 1). Reward and desire are two aspects pleasure induction and have a very widespread, large circuit. Some part of this circuit distinguishes between desire and dread. The so-called pleasure circuitry called “REWARD” involves a well-known dopamine pathway in the mesolimbic system that can influence both pleasure and motivation. In simplest terms, the well-established mesolimbic system is a dopamine circuit for reward. It starts in the ventral tegmental area (VTA) of the midbrain and travels to the nucleus accumbens (Figure 2). It is the cornerstone target to all addictions. The VTA is encompassed with neurons using glutamate, GABA, and dopamine. The nucleus accumbens (NAc) is located within the ventral striatum and is divided into two sub-regions—the motor and limbic regions associated with its core and shell, respectively. The NAc has spiny neurons that receive dopamine from the VTA and glutamate (a dopamine driver) from the hippocampus, amygdala and medial prefrontal cortex. Subsequently, the NAc projects GABA signals to an area termed the ventral pallidum (VP). The region is a relay station in the limbic loop of the basal ganglia, critical for motivation, behavior, emotions and the “Feel Good” response. This defined system of the brain is involved in all addictions –substance, and non –substance related. In 1995, our laboratory coined the term “Reward Deficiency Syndrome” (RDS) to describe genetic and epigenetic induced hypodopaminergia in the “Brain Reward Cascade” that contribute to addiction and compulsive behaviors [3,6,41]. Furthermore, ordinary “liking” of something, or pure pleasure, is represented by small regions mainly in the limbic system (old reptilian part of the brain). These may be part of larger neural circuits. In Latin, hedus is the term for “sweet”; and in Greek, hodone is the term for “pleasure.” Thus, the word Hedonic is now referring to various subcomponents of pleasure: some associated with purely sensory and others with more complex emotions involving morals, aesthetics, and social interactions. The capacity to have pleasure is part of being healthy and may even extend life, especially if linked to optimism as a dopaminergic response [42]. Psychiatric illness often includes symptoms of an abnormal inability to experience pleasure, referred to as anhedonia. A negative feeling state is called dysphoria, which can consist of many emotions such as pain, depression, anxiety, fear, and disgust. Previously many scientists used animal research to uncover the complex mechanisms of pleasure, liking, motivation and even emotions like panic and fear, as discussed above [43]. However, as a significant amount of related research about the specific brain regions of pleasure/reward circuitry has been derived from invasive studies of animals, these cannot be directly compared with subjective states experienced by humans. In an attempt to resolve the controversy regarding the causal contributions of mesolimbic dopamine systems to reward, we have previously evaluated the three-main competing explanatory categories: “liking,” “learning,” and “wanting” [3]. That is, dopamine may mediate (a) liking: the hedonic impact of reward, (b) learning: learned predictions about rewarding effects, or (c) wanting: the pursuit of rewards by attributing incentive salience to reward-related stimuli [44]. We have evaluated these hypotheses, especially as they relate to the RDS, and we find that the incentive salience or “wanting” hypothesis of dopaminergic functioning is supported by a majority of the scientific evidence. Various neuroimaging studies have shown that anticipated behaviors such as sex and gaming, delicious foods and drugs of abuse all affect brain regions associated with reward networks, and may not be unidirectional. Drugs of abuse enhance dopamine signaling which sensitizes mesolimbic brain mechanisms that apparently evolved explicitly to attribute incentive salience to various rewards [45]. Addictive substances are voluntarily self-administered, and they enhance (directly or indirectly) dopaminergic synaptic function in the NAc. This activation of the brain reward networks (producing the ecstatic “high” that users seek). Although these circuits were initially thought to encode a set point of hedonic tone, it is now being considered to be far more complicated in function, also encoding attention, reward expectancy, disconfirmation of reward expectancy, and incentive motivation [46]. The argument about addiction as a disease may be confused with a predisposition to substance and nonsubstance rewards relative to the extreme effect of drugs of abuse on brain neurochemistry. The former sets up an individual to be at high risk through both genetic polymorphisms in reward genes as well as harmful epigenetic insult. Some Psychologists, even with all the data, still infer that addiction is not a disease [47]. Elevated stress levels, together with polymorphisms (genetic variations) of various dopaminergic genes and the genes related to other neurotransmitters (and their genetic variants), and may have an additive effect on vulnerability to various addictions [48]. In this regard, Vanyukov, et al. [48] suggested based on review that whereas the gateway hypothesis does not specify mechanistic connections between “stages,” and does not extend to the risks for addictions the concept of common liability to addictions may be more parsimonious. The latter theory is grounded in genetic theory and supported by data identifying common sources of variation in the risk for specific addictions (e.g., RDS). This commonality has identifiable neurobiological substrate and plausible evolutionary explanations. Over many years the controversy of dopamine involvement in especially “pleasure” has led to confusion concerning separating motivation from actual pleasure (wanting versus liking) [49]. We take the position that animal studies cannot provide real clinical information as described by self-reports in humans. As mentioned earlier and in the abstract, on November 23rd, 2017, evidence for our concerns was discovered [50] In essence, although nonhuman primate brains are similar to our own, the disparity between other primates and those of human cognitive abilities tells us that surface similarity is not the whole story. Sousa et al. [50] small case found various differentially expressed genes, to associate with pleasure related systems. Furthermore, the dopaminergic interneurons located in the human neocortex were absent from the neocortex of nonhuman African apes. Such differences in neuronal transcriptional programs may underlie a variety of neurodevelopmental disorders. In simpler terms, the system controls the production of dopamine, a chemical messenger that plays a significant role in pleasure and rewards. The senior author, Dr. Nenad Sestan from Yale, stated: “Humans have evolved a dopamine system that is different than the one in chimpanzees.” This may explain why the behavior of humans is so unique from that of non-human primates, even though our brains are so surprisingly similar, Sestan said: “It might also shed light on why people are vulnerable to mental disorders such as autism (possibly even addiction).” Remarkably, this research finding emerged from an extensive, multicenter collaboration to compare the brains across several species. These researchers examined 247 specimens of neural tissue from six humans, five chimpanzees, and five macaque monkeys. Moreover, these investigators analyzed which genes were turned on or off in 16 regions of the brain. While the differences among species were subtle, **there was** a **remarkable contrast in** the **neocortices**, specifically in an area of the brain that is much more developed in humans than in chimpanzees. In fact, these researchers found that a gene called tyrosine hydroxylase (TH) for the enzyme, responsible for the production of dopamine, was expressed in the neocortex of humans, but not chimpanzees. As discussed earlier, dopamine is best known for its essential role within the brain’s reward system; the very system that responds to everything from sex, to gambling, to food, and to addictive drugs. However, dopamine also assists in regulating emotional responses, memory, and movement. Notably, abnormal dopamine levels have been linked to disorders including Parkinson’s, schizophrenia and spectrum disorders such as autism and addiction or RDS. Nora Volkow, the director of NIDA, pointed out that one alluring possibility is that the neurotransmitter dopamine plays a substantial role in humans’ ability to pursue various rewards that are perhaps months or even years away in the future. This same idea has been suggested by Dr. Robert Sapolsky, a professor of biology and neurology at Stanford University. Dr. Sapolsky cited evidence that dopamine levels rise dramatically in humans when we anticipate potential rewards that are uncertain and even far off in our futures, such as retirement or even the possible alterlife. This may explain what often motivates people to work for things that have no apparent short-term benefit [51]. In similar work, Volkow and Bale [52] proposed a model in which dopamine can favor NOW processes through phasic signaling in reward circuits or LATER processes through tonic signaling in control circuits. Specifically, they suggest that through its modulation of the orbitofrontal cortex, which processes salience attribution, dopamine also enables shilting from NOW to LATER, while its modulation of the insula, which processes interoceptive information, influences the probability of selecting NOW versus LATER actions based on an individual’s physiological state. This hypothesis further supports the concept that disruptions along these circuits contribute to diverse pathologies, including obesity and addiction or RDS.

#### Prefer:

#### 1] Actor spec—governments must use util because they don’t have intentions and are constantly dealing with tradeoffs—outweighs since different agents have different obligations—takes out calc indicts since they are empirically denied.

#### Evolution proves our theory true

**Johnson and Thayer 16** – Dominic D. P. Johnson, D.Phil., Ph.D.\* and Bradley A. Thayer, Ph.D., “The evolution of offensive realism Survival under anarchy from the Pleistocene to the present,” https://www.cambridge.org/core/services/aop-cambridge-core/content/view/56B778004187F70B8E59609BE7FEE7A4/S073093841600006Xa.pdf/div-class-title-the-evolution-of-offensive-realism-div.pdf

Few principles unite the discipline of international relations, but one exception is anarchy—the absence of government in international politics. Anarchy is, ironically, the ‘‘ordering’’ principle of the global state system and the starting point for most major theories of international politics, such as neoliberalism and neorealism.42,43,44,45 Other theoretical approaches, such as constructivism, also acknowledge the impact of anarchy, even if only to consider why anarchy occurs and how it can be circumvented.46,47 Indeed, the anarchy concept is so profound that it defines and divides the discipline of political science into international politics (politics under conditions of anarchy) and domestic politics (politics under conditions of hierarchy, or government). Given the prominence of the concept in present-day international relations theory, it is striking that anarchy only took hold as a central feature of scholarship in recent decades, since the publication of Kenneth Waltz’s Theory of International Politics in 1979. In fact, however, **anarchy has been a constant feature of the entire multimillion year history of the human lineage (and indeed the 3.5 billion–year history of the evolution of all life on Earth before that). It is not just that we lack a global Leviathan today; humans never had such a luxury. The fact that human evolution occurred under conditions of anarchy, that we evolved as hunter-gatherers in an ecological setting of predation, resource competition, and intergroup conflict, and that humans have been subject to natural selection** for millions of years **has profound consequences for understanding human behavior**, not least how humans perceive and act toward others. Scholars often argue over whether historically humans experienced a Hobbesian ‘‘state of nature,’’ but—whatever the outcome of that debate—it is certainly a much closer approximation to the prehistoric environment in which human brains and behavior evolved. **This legacy heavily influences our decision-making and behavior today, even—perhaps especially—in the anarchy of international politics**. We argue that **evolution under conditions of anarchy has predisposed human nature toward the behaviors predicted by offensive realism: Humans**, particularly men, **are strongly self-interested, often fear other groups, and seek more resources, more power, and more influence** (as we explain in full later). **These strategies** are not unique to humans and, in fact, **characterize a much broader trend in behavior among mammals as a whole—especially primates**—as well as many other major vertebrate groups, including birds, fish, and reptiles. **This recurrence of behavioral patterns** across different taxonomic groups **suggests that the behaviors characterized by offensive realism have broad and deep evolutionary roots**. This perspective does not deny the importance of institutions, norms, and governance in international politics. On the contrary, it provides or adds to the reasons why we demand and need them, and indeed why they are so hard to establish and maintain. Until recently, **international relations theorists rarely used insights from the life sciences to inform their understanding of human behavior**. However, **rapid advances in the life sciences offer increasing theoretical and empirical challenges to scholars in** the social sciences in general and **international relations** in particular, who are therefore under increasing pressure to address and integrate this knowledge rather than to suppress or ignore it. Whatever one’s personal views on evolution, **the time has come to explore the implications of evolutionary theory for mainstream theories of international relations**. **The most obvious challenge that evolutionary theory presents to international relations concerns our understanding of human nature**. Theories purporting to explain human behavior make explicit or implicit assumptions about preferences and motivations, and mainstream theories in international politics are no exception. Many **criticisms of international relations theories focus on these unsubstantiated or contested assumptions about underlying human nature. The parsimony of general theories depends on how well they explain phenomena across space and time**; in other words, the more closely they coincide with empirical observations across cultures and throughout history. The most enduring theories of international relations, therefore, will be ones that are able to incorporate (or at least do not run against the grain of) evolutionary theory. Although Thomas Hobbes claimed to have deduced Leviathan scientifically from ‘‘motion’’ and the physical senses, he was writing two hundred years before Darwin and so had no understanding of evolution. International relations scholars have tended to claim to deduce their own theories from Hobbes, or subsequent philosophers who followed him, and we suggest it is time to revisit the idea of foundational scientific principles. **Starting with biology, or with human evolutionary history, has never been typical in international relations scholarship**, but this approach is now less exotic than it once seemed as innovators in a range of social sciences, including economics, psychology, sociology, and political science, pursue this line of inquiry. **International relations stands to gain from** similar **interdisciplinary insights**. At the dawn of the 21st century, an era that will be dominated by science at least as much as philosophy, **we have the opportunity to move away from untested assumptions about human nature. Instead, we can make more concrete predictions about how humans tend to think and act in different conditions, based on new scientific knowledge about human cognition** and behavior, **and in particular a greater understanding of the social and ecological context in which human brains and behaviors evolved**. But what was that context?

#### Impact calc –

#### Extinction outweighs:

#### A] Structural violence- death causes suffering because people can’t get access to resources and basic necessities

#### B] Objectivity- body count is the most objective way to calculate impacts because comparing suffering is unethical

#### C] Comes before value-to-life.

Tännsjö 11 (Torbjörn, the Kristian Claëson Professor of Practical Philosophy at Stockholm University, “Shalt Thou Sometimes Murder? On the Ethics of Killing,” <http://people.su.se/~jolso/HS-texter/shaltthou.pdf>) //BS 1-27-2018

\*\*Bracketed to avoid triggers

I suppose it is correct to say that, if Schopenhauer is right, if life is never worth living, then according to utilitarianism we should all [die] commit suicide and put an end to humanity. But this does not mean that, each of us should commit suicide. I commented on this in chapter two when I presented the idea that utilitarianism should be applied, not only to individual actions, but to collective actions as well.¶ It is a well-known fact that people rarely commit suicide. Some even claim that no one who is mentally sound commits suicide. Could that be taken as evidence for the claim that people live lives worth living? That would be rash. Many people are not utilitarians. They may avoid suicide because they believe that it is morally wrong to kill oneself. It is also a possibility that, even if people lead lives not worth living, they believe they do. And even if some may believe that their lives, up to now, have not been worth living, their future lives will be better

#### D] Mathematically outweighs.

MacAskill 14 [William, Oxford Philosopher and youngest tenured philosopher in the world, Normative Uncertainty, 2014]

The human race might go extinct from a number of causes: asteroids, supervolcanoes, runaway climate change, pandemics, nuclear war, and the development and use of dangerous new technologies such as synthetic biology, all pose risks (even if very small) to the continued survival of the human race.184 And different moral views give opposing answers to question of whether this would be a good or a bad thing. It might seem obvious that human extinction would be a very bad thing, both because of the loss of potential future lives, and because of the loss of the scientific and artistic progress that we would make in the future. But the issue is at least unclear. The continuation of the human race would be a mixed bag: inevitably, it would involve both upsides and downsides. And if one regards it as much more important to avoid bad things happening than to promote good things happening then one could plausibly regard human extinction as a good thing.For example, one might regard the prevention of bads as being in general more important that the promotion of goods, as defended historically by G. E. Moore,185 and more recently by Thomas Hurka.186 One could weight the prevention of suffering as being much more important that the promotion of happiness. Or one could weight the prevention of objective bads, such as war and genocide, as being much more important than the promotion of objective goods, such as scientific and artistic progress. If the human race continues its future will inevitably involve suffering as well as happiness, and objective bads as well as objective goods. So, if one weights the bads sufficiently heavily against the goods, or if one is sufficiently pessimistic about humanity’s ability to achieve good outcomes, then one will regard human extinction as a good thing.187 However, even if we believe in a moral view according to which human extinction would be a good thing, we still have strong reason to prevent near-term human extinction. To see this, we must note three points. First, we should note that the extinction of the human race is an extremely high stakes moral issue. Humanity could be around for a very long time: if humans survive as long as the median mammal species, we will last another two million years. On this estimate, the number of humans in existence in the The future, given that we don’t go extinct any time soon, would be 2×10^14. So if it is good to bring new people into existence, then it’s very good to prevent human extinction. Second, human extinction is by its nature an irreversible scenario. If we continue to exist, then we always have the option of letting ourselves go extinct in the future (or, perhaps more realistically, of considerably reducing population size). But if we go extinct, then we can’t magically bring ourselves back into existence at a later date. Third, we should expect ourselves to progress, morally, over the next few centuries, as we have progressed in the past. So we should expect that in a few centuries’ time we will have better evidence about how to evaluate human extinction than we currently have. Given these three factors, it would be better to prevent the near-term extinction of the human race, even if we thought that the extinction of the human race would actually be a very good thing. To make this concrete, I’ll give the following simple but illustrative model. Suppose that we have 0.8 credence that it is a bad thing to produce new people, and 0.2 certain that it’s a good thing to produce new people; and the degree to which it is good to produce new people, if it is good, is the same as the degree to which it is bad to produce new people, if it is bad. That is, I’m supposing, for simplicity, that we know that one new life has one unit of value; we just don’t know whether that unit is positive or negative. And let’s use our estimate of 2×10^14 people who would exist in the future, if we avoid near-term human extinction. Given our stipulated credences, the expected benefit of letting the human race go extinct now would be (.8-.2)×(2×10^14) = 1.2×(10^14). Suppose that, if we let the human race continue and did research for 300 years, we would know for certain whether or not additional people are of positive or negative value. If so, then with the credences above we should think it 80% likely that we will find out that it is a bad thing to produce new people, and 20% likely that we will find out that it’s a good thing to produce new people. So there’s an 80% chance of a loss of 3×(10^10) (because of the delay of letting the human race go extinct), the expected value of which is 2.4×(10^10). But there’s also a 20% chance of a gain of 2×(10^14), the expected value of which is 4×(10^13). That is, in expected value terms, the cost of waiting for a few hundred years is vanishingly small compared with the benefit of keeping one’s options open while one gains new information.

## Underview

#### 1] 1AR theory and RVIs on NC theory are legit – anything else means infinite abuse – drop the debater, competing interps – 1AR are too short to make up for the time trade-off- no RVIs on 1ar theory or 2n theory-the 2n can uplayer for 6 minutes and easily beat any theory 2ar-also key to check back against infinite abuse-

#### 2] Reasonability on 1NC theory with the brightline of link and impact turn ground – there are infinite bidirectional interps that I can never meet – the four minute 1AR doesn’t have enough time to line by line every argument, make offense, and go for substance.