# Case Neg vs Marl Commons

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#### The affirmative is invested in a will to transparency and global modus venvindi which seeks the maximization of norms and satellization of the planet through the installation of a universal security apparatus. Their cooperation over the peaceful use of space succumbs to an understanding of war as reality that expands the operational function of liquidation beyond the atmosphere. Be skeptical of their attachment to transparency, empirical reality, and necessity of security as the search for mastery normalizes an impulse to conquer alterity and produces the very conditions for its collapse.

Baudrillard 83 (Jean Baudrillard, who is he really. *Simulations* translated by Paul Foss, Paul Patton and Philip Beitchman 1983)DR 19

The "space race" played exactly the same role as the nuclear race. This is why it was so easily able to take over from it in the '60's (Kennedy Khrushchev), or to develop concurrently in a mode of "peaceful coexistence." For what is the ultimate function of the space race, of lunar conquest, of satellite launchings, if not the institution of a model of universal gravitation, of satellisation, whose perfect embryo is the lunar module: a programmed microcosm, where nothing can be left to chance? Trajectory, energy, computation, physiology, psychology, the environment - nothing can be left to contingency, this is the total universe of the norm - the Law no longer exists, it is the operational immanence of every detail which is law. A universe purged of every threat to the senses, in a state of asepsis and weightlessness - it is this very perfection which is fascinating. For the exaltation of the masses was not in response to the lunar landing or the voyage of man in space (this is rather the fulfillment of an earlier dream) - no, **we are dumbfounded by the perfection of their plannin**g and **technical manipulation**, by the immanent wonder of programmed development. Fascinated by the maximisation of norms and by the mastery of probability. Unbalanced by the model, as we are by death, but without fear or impulse. For if the law, with its aura of transgression, if order, with its aura of violence, still taps a perverse imaginary, then the norm fixes, hypnotises, dumbfounds, causing every imaginary to involve. We no longer fantasise about every minutia of a program. Its observance alone unbalances. The vertigo of a flawless world.

The same model of planned infallibility, of maximal security and deterrence, now governs the spread of the social. That is the true nuclear fallout: the meticulous operation of technology serves as a model for the meticulous operation of the social. Here, too, **nothing will be left to chance**; moreover, this is the essence of socialisation, which has been going on for some centuries but which has now entered into its accelerated phase, towards a limit people imagined would be explosive (revolution), but which currently results in an inverse, irreversible, implosive process: a generalised deterrence of every chance, of every accident, of every transversality, of every finality, of every contradiction, rupture or complexity **in a sociality illuminated by the norm** and **doomed to the transparency of detail radiated by datacollecting mechanisms**. In fact, the spatial and nuclear models do not even have their own ends: **neither has lunar exploration**, nor **military and strategic superiority**. Their truth lies in their being models of simulation, **vector models of a system of planetary control** (where even the super-powers of this scenario are not free-the whole world is satellised). 8

Reject the evidence: **with satellisation**, the one who is satellised is not whom you might think. By the orbital inscription of a space object, the **planet earth becomes a satellite**, the terrestrial principle of reality becomes excentric, hyperreal and insignificant. By the orbital establishment of **a system of control like peaceful coexistence**, all terrestrial microsystems are satellised and lose their autonomy. All energy, all events are absorbed by this excentric gravitation, **everything condenses and implodes on the micro-model of control** alone **(the orbital satellite),** as conversely, in the other, biological dimension everything converges and implodes on the molecular micromodel of the genetic code. Between the two, caught between the nuclear and the genetic, in the simultaneous assumption of the two fundamental codes of deterrence, every principle of meaning is absorbed, every deployment of the real is impossible.

The simultaneity of two events in July 1975 illustrates this in a striking way: **the linkup in space** of the two American and Soviet super-satellites, apotheosis of peaceful existence - and the suppression by the Chinese of character writing and conversion to the Roman alphabet. This latter signifies the "orbital" establishment of an abstract and model system of signs, into whose orbit will be reabsorbed all those once remarkable and singular forms of style and writing. The satellisation of their tongue: this is the way the Chinese enter the system of peaceful coexistence, which is inscribed in their sky at the very same time by the docking of the two satellites. The orbital flight of the Big Two, the neutralisation and homogenisation of everybody else on earth.

**Yet, despite this deterrence by the orbital authority** - the nuclear code or molecular-events continue at ground level, mishaps are increasingly more numerous, despite the global process of contiguity and simultaneity of data. **But, subtly,** these events no longer make any sense; they are nothing more than a duplex effect of simulation at the summit. The best example must be the Vietnam war, since it was at the crossroads of a maximal historical or "revolutionary" stake and the installation of this deterrent authority. **What sense did that war make**, if not that its unfolding sealed the end of history in the culminating and decisive event of our age?

**Why did such a difficult, long and arduous war vanish overnight as if by magic?**

Why didn't the American defeat (the greatest reversal in its history) have any internal repercussions? If it had truly signified a setback in the planetary strategy of the USA, it should have necessarily disturbed the internal balance of the American political system. But no such thing happened.

Hence **something else took place**. Ultimately this war was only a crucial episode in a peaceful coexistence. It marked the advent of China to peaceful coexistence. **The long sought-after securing and concretising of China's non-intervention**, China's apprenticeship in a global modus vivendi, the passing from a strategy of world revolution to one of a sharing of forces and empires, the transition from a radical alternative to political alternation in a now almost settled system (normalisation of PekingWashington relations): all this was the stake of the Vietnam war, and in that sense, the USA pulled out of Vietnam but they won the war.

And the war "spontaneously" came to an end when the objective had been attained. This is why it was de-escalated, demobilised so easily.

The effects of this same remolding are legible in the field. The war lasted as long as there remained unliquidated elements irreducible to a healthy politics and a discipline of power, even a communist one. When finally the war passed from the resistance to the hands of regular Northern troops, it could stop: it had attained its objective. Thus the stake was a political relay. When the Vietnamese proved they were no longer bearers of an unpredictable subversion, it could be handed over to them. That this was communist order wasn't fundamentally serious: it had proved itself, it could be trusted. They are even more effective than capitalists in liquidating "primitive" precapitalist and antiquated structures.

Same scenario as in the Algerian war.

The other aspect of this war and of all wars since: behind the armed violence, the murderous antagonism between adversaries - which seems a matter of life and death, and which is played as such (otherwise you could never send out people to get smashed up in this kind of trouble), behind this simulacrum of a struggle to death and of ruthless global stakes, the two adversaries are fundamentally as one against that other, unnamed, never mentioned thing, whose objective outcome in war, with equal complicity between the two adversaries, is total liquidation. It is tribal, communal, pre-capitalist structures, every form of exchange, language and symbolic organisation which must be abolished. Their murder is the object of war - and in its immense spectacular contrivance of death, war is only the medium of this process of terrorist rationalisation by the social - the murder through which sociality can be founded, **no matter what allegiance**, communist or capitalist. The total complicity or division of labour between two adversaries (who can even make huge sacrifices to reach that) for the very purpose of remolding and domesticating social relations.

"The North Vietnamese were advised to countenance a scenario of the liquidation of the American presence through which, of course, honour must be preserved."

The scenario: the extremely heavy bombardment of Hanoi. The intolerable nature of this bombing should not conceal the fact that it was only a simulacrum to allow the Vietnamese to seem to countenance a compromise and Nixon to make the Americans swallow the retreat of their forces. The game was already won, nothing was objectively at stake but the credibility of the final montage.

**Moralists about war**, champions of war's exalted values should not be greatly upset: a war is not any the less heinous for being a mere simulacrum - the flesh suffers just the same, and the dead ex-combatants count as much there as in other wars. That objective is always amply accomplished, like that of the partitioning of territories and of disciplinary sociality. What no longer exists is the adversity of adversaries, **the reality of** antagonistic causes, the ideological seriousness of war - also the reality of defeat or victory, war being a process whose triumph lies quite beyond these appearances.

In any case, the pacification (or deterrence) dominating us today is beyond war and peace, **the simultaneous equivalence of peace and war.** "War is peace," said Orwell. Here, also, the two differential poles implode into each other, or recycle one another - a simultaneity of contradictions that is both the parody and the end of all dialectic. Thus it is possible to miss the truth of a war: namely, that it was well over before reaching a conclusion, that at its very core, war was brought to an end, and that perhaps it never ever began. Many other such events (the oil crisis, etc,) never began, never existed, except that artificial mishaps - abstracts, ersatzes of troubles, catastrophes and crises intended to maintain a historical and psychological investment under hypnosis. All media and the official news service only exist to maintain the illusion of actuality - of the reality of the stakes, of the objectivity of the facts. All events are to be read in reverse, where one perceives (as with the communists "in power" in Italy, the posthumous, "nostalgic" rediscovery of gulags and Soviet dissidents like the almost contemporary rediscovery, by a moribund ethnology, of the lost "difference" of Savages) that all these things arrive too late, with an overdue history, a lagging spiral, that they have exhausted their meaning long in advance and only survive on an artificial effervescence of signs, that all these events follow on illogically from one another, with a total equanimity towards the greatest inconsistencies, with a profound indifference to their consequences (but this is because there are none any more: they burn out in their spectacular promotion) - thus the whole newsreel of "the present" gives the sinister impression of kitsch, retro and porno all at the same timedoubtless everyone knows this, and nobody really accepts it. The reality of simulation is unendurable - more cruel than Artaud's Theatre of Cruelty, which was still an attempt at a dramaturgy of life, the last flickering of an ideal of the body, blood and violence in a system already sweeping towards a reabsorption of all the stakes without a trace of blood. For us the trick has been played. All dramaturgy, and even all real writing of cruelty has disappeared. Simulation is master, and nostalgia, the phantasmal parodic rehabilitation of all lost referentials, alone remain. Everything still unfolds before us, in the cold light of deterrence (including Artaud, who is entitled like all the rest to his revival, to a second existence as the referential of cruelty).

**International cooperation over debris is an ideological smokescreen for neoconservative practices and capital fixes – debris risk is incalculable and their collision cascade arguments are a fantasy, but their modelling practice secures a social fantasy of threat that enables imperial transcendence.**

**Ormord, 12** (James, School of Applied Social Science, University of Brighton, “Beyond world risk society? A critique of Ulrich Beck’s world risk society thesis as a framework for understanding risk associated with human activity in outer space.” Environment and Planning D: Society and Space 2013, volume 31, pages 727 – 744)

Prior to the Iridium–Cosmos collision experts placed the odds of two objects larger than ten centimetres in diameter colliding in space at “millions, maybe even billions, to one” (Rincon, 2009). The chances of damage being sustained by operational objects as they collide with smaller objects are much higher, at 1–10%; this may be their single greatest threat (Rex, 1998; Williamson, 2006; Wright, 2009, page 6). A United Nations report in 1999 brought together a range of measurements and statistical models from different agencies in an attempt to draw up a risk assessment. These models “did not agree quantitatively because of differences in assumptions and starting conditions” (UN, 1999, page 25). But despite this, it concluded that collision risk in Low Earth Orbit (less than 2000 kilometres) was “not great”, and the collision risk in Geostationary Orbit was “correspondingly lower”. However, all were also agreed that the number of major collisions would rise exponentially if current trends continued. This is based on the understanding that because it takes a long time to disperse, debris created from one impact will go on to create more impacts in a ‘collision cascade’, referred to as the ‘Kessler Syndrome’ (Brearley, 2005; Williamson, 2006; Wright, 2009). In a 2006 report NASA referred to this situation as “supercritical” (Wright, 2009). Modelling this effect adds to the complexity of a risk assessment already understood to be limited by knowledge of current amounts of debris and of how spacecraft respond to impacts that “do not fall into categories normally known from solid-state physics” (Rex, 1998, page 100; UN, 1999). To these difficulties in modelling the physical risks to spacecraft should be added the impossibility of establishing the social and economic consequences of a collision cascade in Geostationary Orbit, which one author describes as a (limited) resource “necessary to human life” as “the space ... which allows contemporary communication practices to exist” (2) Geostationary Orbit exists at an altitude of 35 786 kilometres at which satellites appear stationary from Earth. See Collis (2009) for a useful discussion of its legal geography. (Collis, 2009, pages 55 and 49). Expert opinion has suggested a collision cascade “could take out world communications” (Ellis, 2009). Outer space was once considered inexhaustible. It is now being realised that the development of outer space has been unevenly concentrated in key regions (see MacDonald, 2007), with implications for thinking of outer space as a ‘common pool resource’. Debris might impede the use of space within a generation as the unintended consequences of human activity undermine its promise (Benko and Schrogl, 1997a). Earth’s orbit now has to be seen as a ‘fragile environment’ for human activity (Benko and Schrogl, 1997a; Williamson, 2006). A 1972 UN Convention established that the ‘launching state’ is liable for any damage caused by its activities or by nongovernmental entities operating under its jurisdiction. In terms of damage caused by debris in outer space, if fault can be established then financial reparation must be made to restore damage to people or property. There is therefore, in principle, a mechanism for establishing accountability. Lotta Viikari (2008) still holds out hope for the development of Environmental Impact Assessments and the extension of ‘polluter pays’ principles to space debris (page 20). This convention breaks down, however, in a ‘supercritical’ space environment in which it becomes increasingly difficult for a claims commission to establish cause, fault, and damages (Zhao, 2004). Due to the impossibility of establishing fault, no claims for compensation have ever been settled in regard to space debris (Kai-Uwe Schrogl, personal communication, October 2010). As international law only considers direct damage between states and their corporations, there is no incentive to protect the space environment itself (Brearley, 2005, page 26). As the shortcomings of the system of accountability have become increasingly apparent, measures to address the space debris issue have been agreed by international bodies. NASA guidelines having already been established following a commitment by President Reagan (in consultation with industry), the 1999 UN report detailed a number of possible strategies for dealing with the space debris issue. Firstly, space objects should avoid releasing debris as part of their normal operations, avoid on-orbit explosion (eg, by venting energy sources), and be disposed of at the end of their lifetimes, either by reducing their orbit so that they reenter the atmosphere more quickly or by moving them to a ‘disposal’ or ‘graveyard’ orbit further from the Earth, though neither is risk-free (Rex, 1998). Secondly, space object designers should protect them with adequate shielding and collision avoidance mechanisms. Many of these guidelines have since been reiterated in 2002 Inter-Agency Space Debris Coordination Committee guidelines and were eventually accepted by the UN in 2008. The possibility but incalculability of a future collision cascade is a prime example of late-modern risk. It is particularly interesting to note that the reports were also marked by the paradox of risk modelling in a reflexive society (Beck, 2009, page 136): scientists attempted to incorporate responses to their predictions into the predictions themselves, thus reducing the predicted risk on which these responses were supposedly based. But the degree of voluntary **international cooperation** in response to the issue of space debris appears to vindicate Beck’s optimism about a cosmopolitanism ‘from above’, shared with others such as David Held [and echoed in regard to space debris by David Wright (2009, page 10)]. **There are, however, reasons to be sceptical**. In an excellent paper on sovereignty in outer space, Jill Stuart (2009) contrasts Held’s (2002) cosmopolitan sovereignty with regime theories based on the Realpolitik of state confrontation [or Everett Dolman’s (2002) ‘Astropolitik’, on which see Fraser MacDonald (2007) for a critique]. Cosmopolitan sovereignty is based on a cosmopolitan consciousness both influencing and influenced by **international cooperation** in outer space (eg, the International Space Station). Stuart argues that the declining importance of the nation-state resonates with the ‘overview effect’ of viewing a borderless Earth from space (White, 1987). Despite her optimism, Stuart is aware that there are serious issues with Held’s cosmopolitanism, especially when applied to outer space. There is good reason to believe that the **apparent** **cosmopolitanism** of human activity in outer space is an **ideological smokescreen** behind which **neoconservative policies** are being pursued (see, for example, Caldicott, 2002). In his analysis of images of Earth taken from space, Denis Cosgrove (1994) identifies both a ‘One World’ discourse that views a globally connected world as the project of a modern Christian American **imperialism**, and a ‘Whole Earth’ vitalist environmentalism that sees Earth as fragile, isolated organic unity. “Each”, however, “effectively exemplifies the Apollonian urge to re-establish a **transcendental**, univocal, and universally valid vantage point from which to sketch a totalising discourse” (page 288). Both thus erase locality. Hans Magnus Enzensberger (1996) also tears apart the ‘spaceship Earth’ ideology reflected in White’s overview effect, arguing that **the illusion of a unified Earth serves only to disguise inequalities of power**. **The lack of accountability** for space debris actually **polarises** international interest in **space debris mitigation**. States such as **the US** that rely on the ‘space operating environment’ **to exercise control over social order** (see Dickens and Ormrod, 2009), and that have an economic interest in maintaining **capital growth** in outer space, have a long-term interest in mitigating against debris [although the US withholds high-quality data because of security concerns (Rincon, 2009)]. States with only a short-term interest in space, such as Indonesia, have not been willing to mitigate space debris (Benko and Schrogl, 1997a). **Rational actor theory** has been employed to argue both that the major spacefaring nations will be willing to mitigate space debris voluntarily (Brearley, 2005) and that international agreements are necessary (Viikari, 2008). Such theory reaches its limits here as it cannot cope with the differing political and economic interests within states and their temporal nature. Even when alliances and agreements hold, it must be questioned whether the current trajectory of space debris mitigation serves the interests of a global public. As Enzensberger (1996) observes, industrial measures to protect the environment either serve to concentrate capital in the hands of larger companies as smaller companies cannot finance their own mitigation systems, or they manifest themselves as costs to the public (page 26). Viikari (2008, page 24) suggests **the former is also true of competing spacefaring states**. Viikari nonetheless advocates a system wherein ‘environmental losers’ could receive other benefits. Neil Smith (2009) anticipates the developmentof **outer space** becomingthe next stage in the extensive **expansion of capitalism**. He also makes clear, in relation to carbon trading on Earth, that a system such as Viikari proposes would neither protect the nearby space environment nor spread the benefits of space activity more equally (it merely represents ‘**the vertical integration of nature into capital’**). The costs borne by the public, meanwhile, include those associated with debris-monitoring and with state mission compliance with international guidelines. There has also been discussion of developing lasers, tethers, and slings to drag debris out of orbit (ESA, 2005), all of which introduce their own forms of risk. A contract to develop such technology would benefit one space technology company or another but the cost would be borne by the public, as recently demonstrated by NASA’s $1.9 million award to Star Technology and Research to develop the ElectroDynamic Debris Eliminator (Chang, 2012). **Commercial sector compliance** with voluntary codes of practice **is** understandably **low** as **it can be extremely costly and organisations** within the sector **cannot be held responsible** in the event of catastrophe. Nor does capital, as an abstract and fluid entity, have any interest in the long-term future of the space environment. **Satellites fix capital for a decade, but their investors have no concern for the future beyond this**. Whether or not guidelines are forced on commercial operators will depend on the relationship between states or suprastates and capital. While the costs of mitigation are seen to undermine commercial viability it is unlikely that procedures will become compulsory. This includes the possibility of a launch tax, which would fly in the face of legislative trends in US space policy. Compulsory measures are more likely, however, if major stakeholders in the space industry become the ones to profit from them. European company EADS Astrium has funded £1 million in research into the CubeSail project at the Surrey Space Centre in the UK. The CubeSail is intended to drag satellites out of orbit at the end of their lifetimes. EADS is a major state contractor as well as a commercial operator. France has recently made it law that satellites under its jurisdiction must be deorbited after twenty-five years. There are profits to be made by Astrium if other countries follow suit. The politics of space debris call into question Beck’s assertion that the old alliances between the state, capital, and science are over. In recent work, Beck (2005, page 138) makes clear that he believes **the transnational logic of capital trumps the power of states**. But this work lacks the attention to the complexity of relationships between neoliberal and neoconservative politics that characterises the work of David Harvey (2003). Harvey argues that states vacillate historically between protecting regional interests and opening borders. The creation of larger and larger alliances of states is one potential outcome of this process. It may be that international state alliances in one form or another take responsibility for space debris. But Harvey reminds us that, firstly, these ‘cosmopolitan’ agreements do not represent the public interest but exist to safeguard capital accumulation, and, secondly, that they are always prone to dissolution. **None of the parties involved support the measure most certain to improve orbital pollution, which is to stop (or limit) the launch of objects into orbit** (UN, 1999). Instead, the solutions being pursued only serve to deepen the contradiction between those who benefit from risk mitigation and those who bear the costs. As attention to the problem grows, **the perceived impending catastrophe appears to demand an immediate technological solution that actually obscures the politics at work** [see de Goede and Randalls (2009); see also Swyngedouw (2007) on catastrophism and climate change].

#### The inevitability of the Kessler syndrome reveals that this debate is only a question of whether we reinvest in the future that is already arriving or let capital collapse in on itself.

**Reno 2018** (Joshua Ozias Reno, Associate Professor of Anthropology at Binghamton University. PhD from the University of Michigan, “Making Time with Amateur Astronomers and Orbital Space Debris: Attunement and the Matter of Temporality” in *Journal of Contemporary Archaeology* 5.1 (2018) 4–18)DR 19

For one thing, space debris is potentially dangerous to spacecraft. Space debris is partly assessed by treating returning spacecraft in a way they were never intended for: as a “hypervelocity impact capture medium”, as they are dented more by artificial objects than natural meteorites (Bernhard et al. 1997). The impetus for tracking and modeling space debris thus comes from the temporal possibilities they threaten. Alice Gorman (2015) describes space debris as an emergent assemblage that takes on new spatio-temporal properties, even when compared with other objects orbiting the Earth. This is most clearly represented in the idea of the Kessler Syndrome (Kessler and Cour-Palais 1978). This theory predicts a “cascade of random collisions that create so much debris the Earth is enveloped and cut off from space” (Gorman 2015, 42). This includes **a feedback process whereby objects continually collide and spread out**, **converting Earth orbits**, especially in LEO, **into** **a hazardous environment filled with tiny fragments**. Space debris would circle eternally overhead like a cloud of bullets awaiting a target, trapping us in fear on the surface. Gorman points out that it is unclear that such a dire situation has emerged or necessarily will. Whether it is likely to take hold or not, the Kessler Syndrome actually reflects anxiety about the unexpected and emergent spacetime of materials orbiting the Earth. The time they threaten is increasingly incorporated into fantasies of space travel. For example, this provided an element of horror in the recent and very successful science-fiction film Gravity (2013), where space debris was depicted as a monstrous threat – like a swarm of abiotic locusts – that cycled the Earth with an alien regularity: without warning they descend and annihilate spacecraft or slaughter hapless astronauts. It may be that these risks are being somewhat amplified by filmmakers and space agencies; yet, the threat of damage from orbital space debris is at least somewhat real. The ISS had to perform approximately eight evasive maneuvers during its first decade of operation in order to avoid collisions with debris. Calculations are normally performed at least three times a day to determine risks of collision over the subsequent 72 hours; if the chance of collision with a large enough object is determined to be greater than one in ten thousand, then maneuvers are planned and executed (see Johnson and Klinkrad 2009). Here is an account of a recent incident, written by representatives from the ESA and NASA assigned to space debris: The last collision avoidance maneuver by ISS occurred on 27 August 2008 when a fragment from the Kosmos 2421 spacecraft was projected to pose a collision risk of 1 in 72, i.e., 0.014 […]. This piece of debris was one of more than 500 cataloged debris released from Kosmos 2421 during three major fragmentation events from March to June 2008. At the time of these fragmentations, Kosmos 2421 was only about 60 km above the orbit of the ISS. As these debris decayed down through the ISS orbit, the number of potentially threatening conjunctions each month increased by a factor of three. (Johnson and Klinkrad 2009, 5) Occasionally, these objects also fall from the sky, as occurred in December of 2016 when a large object came seemingly out of nowhere and smashed a man’s van in Milwaukee, Wisconsin (Lemoine 2016). Wisconsin is also where a fragment of Sputnik 4 crashed down from the sky in 1962. The occasion is still celebrated in one town as “Sputnikfest”, including a pageant to determine the annual “Miss Space Debris” (David 2013). According to Dickens and Ormrod (2007, 153), space debris **is arguably even more meaningful as both** barrier **and bridge to desirable futures**. **These hoped-for futures involve**, for instance, further **exploration and exploitation beyond LEO** and **into the very valuable and legally contested domain of geostationary orbit**, **where satellites can more easily analyze** from and transmit data to the entire planet (Collis 2009). This also includes NewSpace initiatives that seek to extend capitalism and empire beyond the limits of the Earth, whether to mine asteroids or colonize Mars (Dickens and Ormrod 2007; Dickens 2009). **These initiatives** provide a clear motivation to clean up the polluted and risk-filled environment in the vicinity of Earth. From this admittedly interested perspective, the presence of space debris limits the utilization of LEO, MEO and GEO, **creating risks for** any state and/or capital investment. Insofar as space debris influences assessments concerning the utilization of outer space for various ends, it directly mediates the futures that space agencies and industries imagine **possible** and **desirable**. To manage these risks requires attunement. Space agencies must first be able to find the objects and predict their strange movements. As with contract archaeologists, experts are called upon to manage those materials that might otherwise interfere with the success of productive enterprises of extraction, construction and consumption. The primary difference is that, where contract archaeology, and cultural resource management generally, endeavor to protect the objects they curate from destruction by human industry, in astronomical CRM the risks are reversed: it is those voyaging into space who potentially have something to fear from leftover remains, and not the other way around. As Gorman makes clear, the primary difficulty with an archaeological analysis of space debris is the issue of distance and a lack of “direct field experience” (Gorman 2015, 33). Remote sensing can only provide fragmentary glimpses of objects large enough to capture. In short, the objects are too small and space is too big. In this regard, archaeology becomes much like astronomy. Amateur astronomers could be seen as ideally positioned to aid in such research, in fact, as they can cover more of the spacescape than even a very large centralized government telescope (Marshall et al. 2015). Beginning after the launch of Sputnik 1, amateur citizen scientists known as “Moonwatchers” (named after Operation Moonwatch, a Smithsonian project), helped form a global network of satellite trackers who provided crucial information to space agencies and governments throughout the Cold War (see McCray 2008). Given the secrecy that has surrounded a great many satellites, furthermore, such efforts arguably also help to democratize scientific knowledge. A more recent example is the crowd-sourced effort to scan space in search of the elusive and acclaimed Planet 9. And, perhaps more importantly, amateur astronomers have developed the patience to undertake this, having had to routinely undergo attunement to multiple temporal constraints in order to follow their passion. It therefore is not surprising that in 2012, DARPA (Defense Advanced Research Projects Agency, the US Department of Defense’s projects agency created after Sputnik 1 launched) proposed to enroll amateur astronomers in their hunt for space debris. The goal, they claimed, was to supplement the DoD’s Space Surveillance Network with a new program called SpaceView. Astronomers would help DARPA track the debris so that they could launch a satellite recycling robot, called the Phoenix; initially, it was hoped that this would be ready by 2017, although it is still in development. The Phoenix would find the debris identified by astronomers and use the parts to support new space missions. The European Space Agency and NASA have announced a similar goal, without any mention of the use of amateur astronomers. The appeal of recycling space debris is that it turns the threat into a resource that can make up for the enormous terrestrial funds and resources that are needed to launch objects into Earth’s orbit and beyond. With the help of amateur astronomers, space debris would not only be a form of cultural resource to manage – as it is typically imagined within the archaeology of outer space – **but a material foundation for new and emergent futures.** Precisely because amateur astronomers are used to undergoing attunement to terrestrial and cosmic temporalities, however, they may not answer the call. Those astronomers that I have met are skeptical of DARPA’s plans (which, like many proposals to capture and clean up the orbital environments of Earth, have yet to materialize). Amateur astronomers are too aware of the trials undergone to peer through the media of sky and space, the time it would take to find something small and unexpected. Perhaps more importantly, this is free labor that they would rather use for more satisfactory ends. Space debris, after all, is usually thought of as noise that disrupts their careful efforts at observation. Conclusion There is a sense in which both astronomical and archaeological practice share a peculiar temporal multiplicity or polychronicity. They are both material practices directed at traces in the present, about things in the past, for the sake of the future. That is, no matter what form they take, their true object is not the actual rays of light or fragments of material they have access to in the present, but the past reality these stand for and enable us to better imagine (whether distant celestial objects or human societies as they once were). And no matter whether the goal of what they do is preserving a memory or engaging in positive social change, they are striving toward a hoped-for future where the memory lasts and/or people are better off (cf. McGuire 2008). I have argued that amateur astronomy in general, and the observation of space debris in particular, demonstrate how materials can do more than stand for time’s passing, but also produce a temporality all their own, with which one can become more or less attuned. This raises the question of whether such time is uniform or multiple. Adam (1995, 1998) and Connolly (2013) both argue that the universe consists of multiple, nested and semi-autonomous temporalities. Similarly, the heirs of Einsteinian relativity in contemporary astronomy have developed not one master clock but a “family of time scales” which include Universal Time, International Atomic Time, Coordinate Universal Time and “apparent time”, among others (Seidelmann and Seago 2011). By contrast, Ingold and Hallam (2007) and Ingold (2012, 2014) usefully direct our attention to the role of the nonhuman as productive of temporality. However, according to Georgina Born, they rely on a “monotemporality of becoming” that fails to acknowledge “the plural temporalities in operation both in human and nonhuman life and in cultural production” (Born 2015, 365). Based on the experiences of amateur astronomers and the phenomenon of orbital space debris, one could argue not only that materials are time, but that these times are multiple, nested and emergent. The tendency in the growing archaeology of outer space has been to look at documented evidence from the vantage point of the ground – but, unlike amateur astronomers, not through telescopes. This does not make the evidence they have gathered less important, but it does mean that the material practices involved, of observing and becoming attuned, is different. The archaeological curation of objects in outer space not only consists of a new form of cultural resource management or heritage research, although it is that as well (see Barclay and Brooks 2009; Idziak 2013). Rather than helping us merely to record the past, it may, as Gorman (2014, 2015) argues, help us understand the emergence of new temporalities. In particular, she associates observation of outer space with the Anthropocene, which “cannot be understood without reference to space. **The Sun**, **Moon**, and **electromagnetic environment shape and drive the climate of the Earth**” (Gorman 2014, 90). To reckon with such unsettling temporal possibilities, one need only turn to astronomical practice, which has long facilitated new ways of imagining the universe’s ultimate beginnings and endings… from the Big Bang and Big Crunch, to the Milky Way’s eventual collision with the Andromeda Galaxy, and the inevitable incineration of the Earth as it is engulfed by our aging Sun, which itself will eventually die. If anything, **astronomers must be open to many futures**, **many endings**. The difference between these disastrous, imagined futures **and** those associated with space debris is that, by limiting the exploitation of orbital regions and the exploration of the universe, space debris serves as a temporal blockage of sorts – one that not only frustrates us in the present but delays or eliminates possibilities, including the possibility of future escape from the climatic and climactic disasters that await a humanity that may be prevented from ever safely leaving Earth behind. Perhaps space debris can never be mastered and will only multiply. If so, it would have to be attuned to as yet another constraining nonhuman force, mediating access to desired and hoped-for views of, and futures in, space. One might assume that the main limitation confronting the archaeology of outer-space exploration is the lack of access to the remains floating in orbit or crashing into the earth. Archaeologists of outer space have developed novel ways to study what they rarely can grasp and handle, measure and collect, but amateur astronomers have far more experience, being passionate about things to which they have no direct access. I have no reason to endorse DARPA’s view, that amateur astronomers are interested or able to provide new data, per se. What I think they represent, instead, is an alternative sensibility, one cultivated over many generations, **whereby knowledge practices are undergone rather than mastered.** This is true not only of amateurs, those I have focused on, but of professionals as well. Exoplanet astronomers, for instance, are tasked with imagining worlds from the slightest glimpse of planets many light-years away (Messeri 2016). Not only do archeologists of space debris have a closer target, in space and in time: they also know much more about the world from which these metal pests emerged. If they became more familiar with an astronomical sensibility, one **premised on distance and attunement**, restraint and constraint, they might discover a set of practices that has grown in the absence of such relative mastery, subject to processes of formation and deformation not unlike what conventional archaeologists encounter amid the Earth’s beguiling surface.

#### The aff’s invocation of a cosmopolitan transnational worldview derives from modern conception of the human as self-authoring, sovereign, and rational driver of human progress. Calls for cosmopolitan orientations legitimate those already in possession of global capacity to define the global order, reproducing and intensifying a bifurcated global citizenship on the lines of Man.

Jabri 11 [Vivienne Jabri is a professor in the Department of War Studies at King’s College - London. “Cosmopolitan politics, security, political subjectivity.” European Journal of International Relations, Vol 18, No 4. P 625-644.]

**The cosmopolitan worldview is narrated** across regions and cultures, so that a term that has its origins in ancient Greece can be thought of **as encompassing an attitude** or a mode of being **that is receptive to difference, extending care and hospitality towards the stranger.** From Diogenes to Ibn Khaldun to Tagore, the idea of the **cosmopolitan** as a form of being that is at once of the world and of locality **is** also evocative of **an ethos of mutual recognition, interconnection and ethical commitment.** However, as noted by Sheldon Pollock et al. (2000: 577), ‘cosmopolitanism is not some known entity existing in the world, with a clear genealogy from the Stoics to Immanuel Kant, that simply awaits more detailed description at the hands of scholarship’. Nevertheless, **attempts** to somehow ground cosmopolitanism, to confer it a fixed meaning, **to transform this meaning into a political project, derives from a distinctly modern conception of ‘man’ as a self-authoring entity whose rationality is the essential driver of human progress.** If cosmopolitanism is conceived as a modern project, the challenge is then to trace the political and its modes of expression in the different forms that cosmopolitanism takes. The aporia that lies at the heart of cosmopolitanism is revealed when we consider how the concept can performatively generate two quite different, but interrelated possibilities. One possibility, as will be shown below, is that of security, and the other is that of solidarity. Both possibilities invoke the global as a terrain of action, of intervention, so that the subjectivities invoked by the concept include the one who acts, or seeks to act, upon the global as a terrain of humanity, but also with this humanity, and the one acted upon, but also with. Genealogically, as Stephen Toulmin highlights, the idea of the ‘cosmopolis’ seeks to ‘give a comprehensive account of the world, so as to bind things together in “politico-theological”, as much as in scientific or explanatory terms’ (Toulmin, 1990: 128), an account that at the dawn of modernity, in 17th-century Europe, places a premium on the certain and the rational over the uncertain and the emotional. While the genealogical backdrop to the concept is beyond the remit of this article, it is important to highlight the idea that the concept of the cosmopolitan, or the cosmopolitical, brings forth, or enables, a conception of the global as a terrain of action. But what form does such action take? And what are the conditions of possibility that confer primacy to certain forms of action over others, certain forms of subjectivity over others? For David Chandler (2009b), to invoke the ‘global’ as a terrain of politics is ‘ideological’ rather than being premised on empirical investigation of how it is that individuals and groups come to conceive of themselves as political beings beyond their locality. Only through such empirical investigation can we discern how the ‘global’ comes to constitute subjects as political beings. While I fully concur with this call, I want to take a different approach to the question of invocations of the global. I do so by thinking of such invocations in terms of the performative element of the concept of the cosmopolitan; what the concept enables. In writing critically and genealogically on the concept of ‘global civil society’, Jens Bartelson (2006: 372) argues that ‘Rather than asking what the concept of global civil society might mean and what kind of institutions and practices it might refer to, we should ask what is done by means of it — what kind of world is constituted, and what kind of beliefs, institutions and practices can be justified, through the usage of this concept?’ This is the approach I wish to take in relation to the concept of cosmopolitanism and ask what is done by means of it. Much of what is understood today as **the cosmopolitan project has its genesis in the trajectory of liberal thought, from the Enlightenment to the present** (Fine, 2003). Indeed the conceptual schema that came to define the Enlightenment provides an indication of the distinguishing political content of liberal cosmopolitanism. As argued by Koselleck (1988: 121–122), the 18th century saw the rise of the ‘concept of criticism’ and its ‘growing political importance’ as it made its target of critique not just the Church, but the absolutist state, so that the ‘yardstick’ (1988: 8) by which Enlightenment thought could be measured was its opposition to absolutist rule, an opposition that found expression in dualisms that though challenged, nevertheless inform much thinking to the present; nature versus culture, the domestic and the international, epistemology and ethics, the latter and politics. This is the context within which the cosmopolitan imagination could be given political and juridical content, one that, as in Kant for example, could see the driving imperative of security as being complicit not just in the affirmation of bounded political community, but also in the legislation of its limits.7 While Kant’s ontological and epistemological commitments reveal the trajectory of his thought in arriving at his conception of ‘cosmopolitan right’ (see Williams, 1992; cf. Bartelson, 1995), what is important to highlight in the context of this article is that, **in Kant, humanity is compelled, for purposes of reason and of nature, to ‘discover’ and ‘reinforce’ what he refers to as a ‘cosmopolitan system of general political security’** (Kant, 1970: 49). **This in turn must be related to a historical context that saw the elevation of critique as the defining feature of Enlightenment thought, and as a vehicle towards the management of uncertainty. The critique of the absolutist state makes possible, indeed legitimizes, not just the transformation of the internal, but also the external, government of the state and the limitation of its power.** **This regulative aspect of the cosmopolitan must also be understood in constitutive terms, as producing a particular kind of state or polity**, one that has a self-understanding of critical limits to rule, both internal and external. Witnessed in its contemporary articulations, we see the concept of cosmopolitanism rendered in both normative and descriptive terms. However, what is important to highlight is the question of what is done by means of the concept. Nowhere in recent discourse is the binding of the world in security terms more apparent than in the so-called ***Princeton Project of National Security***, co-authored by Ikenberry and Slaughter (2006). This project **advocates a** ‘Concert of Democracies’, a **coalition of liberal democratic states that might come to oversee global security and guarantee its protection in the face of threats from the world’s unstable, undemocratic regions. Any transformation** of these latter parts of the world, ‘bringing governments up to PAR’, as the authors put it,8 **must first and foremost see the wholesale transformation of their societies so that they come to aspire towards and realize the promise of democracy, domestically in the form of governance structures that are answerable to the rights of individuals and the welfare of societies, and internationally in the form of acceptance and recognition in conformity with the demands of a liberal global order**: ‘Liberty requires order, and order, at some level, must be able to harness force’ (Ikenberry and Slaughter, 2006: 20). Distinctions are clearly drawn in these statements, so that there is a part of the world, not simply the West, but **the ‘democratic’**, that comes up to PAR, and **must be conferred the authority to act upon the** world, in word and deed, and another part, **the ‘undemocratic’, that can be reshaped through action in the name of global security.** A similar framing might be seen in the discourses of ‘risk’ and ‘liquid fear’ associated respectively with Ulrich Beck and Zygmunt Bauman (Bauman, 2006). While the ‘critical’ underpinnings of Beck and Bauman mean that their distinctions are not turned into the hierarchies apparent in Ikenberry and Slaughter, nevertheless the diagnostics reveal a similar premise that sees the ‘cosmopolitan moment’ emerging through risk and uncertainty and in the moment’s countervailing potential. Beck invokes Hannah Arendt in conceiving of this moment as a ‘new beginning’ comparable to the founding of the Athenian polis, the American founding fathers and the aftermath of the Holocaust, when he claims that the ‘Shock of danger is a call for a new beginning. Where there is a new beginning, there are new possibilities of action’ (Beck, 2009: 49). **The facticity of the cosmopolitan moment is**, in Beck, **contained in ‘world risk society’ just as its normativity is driven by the uncertainties that define risk in the contemporary late-modern era.** Framed in more sceptical tones, Bauman’s (2007) **critical sociology** of what he refers to as ‘liquid times’, **relates the desire for the containment of uncertainty with the ‘shared experience’ of ‘contemporary fears’**. While Beck and Bauman are reluctant to invoke hierarchies of agency in conceptualizing responses to this ‘shared experience’ of fear, Ikenberry and Slaughter are clear in their understanding of the location wherein global authority lies. A similar hierarchical conception of societies in terms of the capacity to govern might best be seen in the cosmopolitanism articulated in Habermas’s writings. Here we discern a picture of what can be done by means of the concept and the forms of political subjectivity that a cosmopolitanism of government generates or makes possible. **For liberal cosmopolitans like Habermas** (1997, 2001), **the actuality of a cosmopolitan global arena must be conferred positive force through law, seen as the pacifier of social relations and as guarantor of the human interest contained in a positive conception of human rights.** For Habermas (1997: 82), ‘cosmopolitan law’ must take precedence over ‘international law’ in that it alone ‘confers legal status to the individual subjects and justifies their unmediated membership in the association of free and equal world citizens’.However, **Habermas’s reference to ‘unmediated membership’ of a global citizenry belies his own reliance on the mediations of power that govern this global terrain.** **The legislative authority that reconfigures international space towards cosmopolitan law lies in the hands of agencies that are in possession of global reach**. For Habermas (1994), such l**egislative authority must have the backing of the ‘moral resources’ that derive from existing constitutional democracies, acting ‘on behalf of’ international institutions such as the UN, or directly, through security organizations such as NATO**. **The reconfiguration of the international does not, therefore, simply emerge as an inevitable consequence of transnational human interaction, but comes to acquire the force of law through situated practices and decisions made by sovereign entities in possession of the human, monetary and military resources necessary for the realization of a global liberal order.**9 There is, then, a disjuncture between the universal claims of a liberal cosmopolitan reconfiguration of the international, a reconfiguration that is authored by a particular set of states and their agents, variously the UN Security Council, NATO or ‘coalitions of the wiling’ as underwriters of Habermas’s ‘post-national constellation’ or Slaughter’s ‘Concert of Democracies’, and the claims to a ‘multi-layered citizenship’ made by those who aspire towards post-national political community.10 Where traditionally in liberal political thought, citizenship arises from a social contract authored by the citizens themselves, **in the context of cosmopolitan citizenship, it is only the few — those in possession of global capacity — who define the limits and remits of what constitutes universal space**. **This bifurcation of the world into those conferred the legislative authority to reconfigure international space and those not in possession of such authority is superimposed by another hierarchical division that sees the former as sources of security and the latter as distinct sources of threat**.11

#### When confronted with the ethical injunction of the aff, respond with “I would prefer not to”—vote neg on presumption

Baudrillard 98 (Jean Baudrillard, “Present Considerations: The Uncertainty of All Value Systems” xx-xx-1998, GS)

It’s also the parody of political emancipation. Is capitalism for you the cold monster Simone Weil referred to when speaking of the State? Baudrillard: It’s a monster which is standing social liberation on its head. It’s capital now that’s emancipating itself from the workers! It’s parents who are liberating them­selves from their children! End of the Oedipus complex, end of the class struggle, in whose shade everything worked so well. All the flows are being reversed. The talk was all of freedom, of emancipation, of transforming as much fatality as possi­ble into liberty. Today, it’s evident that the great wave of liberation is simply the best way of giving the slaves back a bogus power arid freedom. Forced interaction: the masses now intervene directly in the event through the ratings and all the other immediate feedback devices: they’ve become interactive! And in opinion polls we’re all involved statistically: forced complicity. In any case, we’ve been interactive for a long time, like it or not, through all the automatic response systems we’re enslaved to. And the interactivity we’re being offered will never – by a long chalk – be the equal of the interactivity we already suffer: the col­lective interpassivity which the other form merely prolongs with information and communications technologies. This is why it’s impossible, in the interactive sphere, to raise the problem of free­dom and responsibility. People are almost amazed that they have children (are children ever amazed that they have parents?). They’re amazed at being responsible for them, as at many other things. They’re amazed at having to take charge of their own lives. They haven’t the heart for it any more; they’ve no convictions. In pre­sent conditions, they’re even amazed at having a body. There’s no longer any real basis for all that. It no longer imposes itself on the imagination or on consciousness as a value, nor even on the unconscious, as a fantasy. In this context, any responsi­bility or appeal to responsibility is surrealistic. They might just as well be amazed at having to seek work – as they might at being relay stations for lots of meaningless networks, the involuntary actors in a general interactive comedy – the targets for demands and questions for which they are merely the automatic answering machines. Petit: Are they amazed, at least, that they live in silent collusion with the powers that be? Baudrillard: Not even that, since they’re in collusion with a power which, strictly speak­ing, no longer even exists, which is even worse. Which is simultaneously invested and disinvested by everyone, like a revolving stage or a zero-sum variable geom­etry. Everyone plays along in the comedy of power (as in many others besides: the comedy of the social or of culture). But I retain the hope that there’s a double game going on here, both individual and collective. One ought to be able to pre­vent this situation from perpetuating itself, to disconnect it, break down the consensual sequence. But one can hardly have any illusions, either about the awareness generated or about revolt following. In a history in progress, you cre­ate an event if you anticipate, if you create more rapid conditions of development, and hence an explosive differential. In an involutive curve like ours, by attempting to speed up or correct the system you contribute to the involution. We’re trapped. We’re part of the automatic writing of the system. But there are uncon­scious forms of social upheaval and creeping revolt against this forced participation we’ve been speaking of. For example, there has gradually emerged recently into popular consciousness (unconsciousness) the (old, ’68) idea that consumption is a con. Petit: The consumer has supplanted the citizen, then. Hence, as you noted in your book of 1970,[2](https://baudrillardstudies.ubishops.ca/present-considerations-the-uncertainty-of-all-value-systems/#2) the intense guilt which attaches to this new style of hedonis­tic behaviour. Baudrillard: Even in the reptilian brain of the grass-roots consumer, it’s become clear, when faced with power’s economic ultimatum – consume, consume, or the machine will grind to a halt – that consumers have become hostages, guinea pigs. After the general mobilization of the worker, then the soldier, then the citizen in universal suffrage (vote any Way you like, but vote!), we now have the mobilization of the consumer. And, with it, new latent forms of resistance when those from whom one wishes to extort need, expenditure as a social obligation – having extorted speech, votes, sex and happiness from them – realize what, “embolic” power they have in relation to the system: quite simply to consume less – not out of conscientious objection, or even from political resolve, but as a self-defence reflex. Here’ again, an agonizing revision of the watchwords of modernity is in prospect – the watchwords of growth and welfare. It’s a revisionism, this refusal to consume, a social treason in the eyes of the dominant free-market liberalism. A new class struggle is beginning” (if the herd doesn’t want to graze, how is one to make one’s butter?) Petit: There is perhaps a new political economy to bring about. Reversibility can also take the form of the re-founding of the economic sphere. I’m thinking of the contaminated blood affair, mad cows, asbestos… Baudrillard: Is this still political economy? I think the two terms, the economic and the political, have mingled their determinations and, so to speak, imploded into one another. We’re in the postscript of a history or a political economy in which we’re dealing with the waste products of two centuries of capital and production, includ­ing human waste. For thirty years or more we’ve been engaged in the management of waste, in a politics and an economy of dejection – which clearly involves a cer­tain abjection – in an interminable enterprise of recycling, cleansing and laundering, and this, once again, includes human material. And not only in its social dimension, but in the reprocessing of the genetic capital of the species. The whole system of modernity has embarked upon repentance and assumed a victim’s perspective, as though we were dealing with a historical catastrophe of the human race that already existed, had already occurred, and the recycling of that catastro­phe. We’re all impersonal victims of this virtual catastrophe, this backfiring of capital and history, from which we re-emerge as its symptoms and its multiple waste products. Hence the agonizing revision of modernity in which we’re engaged, excluded from ourselves by the unconditional liberation of all our desires. In this sense, we’re in a fundamentally revisionist society. The whole century is currently in mourning for, and repenting, all the libera­tions it has desired and accommodated, all the bounds it has burst – everything it was enslaved to and is now orphaned by. All the gains of modernity and liberation in recession – sex, tobacco, alcohol, speed, abortions: activities which are now clan­destine, doomed to prohibition and apartheid, refused a residence permit or cloistered in reserves. A general revisionist movement and a tide now flowing the other way – for future generations, this will all doubtless form part of what they never knew (happiness or hell!) For us, at least, those things still had the time to exist. But with the precession of the prohibition, they will disappear from circula­tion without even having appeared. Similarly, with all the ideals of modernity, the ideals of the Enlightenment, of happiness, well-being and freedom, their technical realization amounts to a violent desublimation. All that was liberated is currently being liquidated. Petit: Can’t one, then, liberate oneself from liberation? Baudrillard: The paradox of liberation is that the people liberated are never the ones you think: children, slaves, women or colonial peoples. It’s always the others liberating themselves from them, getting rid of them in the name of a principle of freedom and emancipation. Hence the dramatic concern of children to ensure that parents don’t stop being parents, or at least that they do so as late as possible. Hence the collective concern to beg the State not to stop being the State, to force it to take on its role, whereas it’s constantly trying to relinquish that role – and with good reason. The State is constantly “liberating” the citizens, urging them to look after themselves – something they generally don’t want to do at all. In this sense, we’re all potential Bartlebys: “I would prefer not to” Be free! Be responsible! Take responsibility for yourself! – “I would prefer not to”. Preferring not to, rather than willing something (Philippe Lançon, Libération). Preferring not to any more. Not to run any more, or compete, or consume, and not, at any price, to be free. This is all part of the pattern of a repentance of modernity, of a subtle indifference which senses the dangers of a responsibility and an emancipation which are too good to be true. Hence the currently triumphant sentimental, familial, political and moral revisionism, which can take on the more violent aspect of a “reac­tionary” hatred of oneself or others, the product of the disillusionment that follows liberatory violence. This opposite tide, this “regressive” resublimation, is the con­temporary form – and, so to speak, the consequence – of the repressive desublimation analysed by Marcuse. Decidedly, freedom isn’t simple, and liberation even less so.

## Case

### Advantage 1

#### How do they solve satellites? Also their scenario is based on the kessler affect which is super unlikely

#### The risk of this advantage should be close to 0 -

**1] Probability – 0.1 percent chance of a collision.**

Alexander William **Salter**, **Economics Professor at Texas Tech**, **’16**, “SPACE DEBRIS: A LAW AND ECONOMICS ANALYSIS OF THE ORBITAL COMMONS” 19 STAN. TECH. L. REV. 221 \*numbers replaced with English words

The probability of a collision is currently **low**. Bradley and Wein estimate that the **maximum probability** in LEO of a collision over the lifetime of a spacecraft remains **below one in one thousand**, conditional on continued compliance with NASA’s deorbiting guidelines.3 However, the possibility of a future “snowballing” effect, whereby debris collides with other objects, further congesting orbit space, remains a significant concern.4 Levin and Carroll estimate the average immediate destruction of wealth created by a collision to be approximately $30 million, with an additional $200 million in damages to all currently existing space assets from the debris created by the initial collision.5 The expected value of destroyed wealth because of collisions, currently small because of the low probability of a collision, can quickly become significant if future collisions result in runaway debris growth.

**2] Time frame – Kessler effect 200 years away.**

Peter **Stubbe**, PhD in law @ Johann Wolfgang Goethe University Frankfurt, **’17**, State Accountability for Space Debris: A Legal Study of Responsibility for Polluting the Space Environment and Liability for Damage Caused by Space Debris, Koninklijke Brill Publishing, ISBN 978-90-04-31407-8, p. 27-31

The prediction of possible scenarios of the future evolution of the debris p o p ulation involves many uncertainties. Long-term forecasting means the prediction of the evolution of the future debris environment in time periods of decades or even centuries. Predictions are based on models84 that work with certain assumptions, and altering these parameters significantly influences the outcomes of the predictions. Assumptions on the future space traffic and on the initial object environment are particularly critical to the results of modeling efforts.85 A well-known pattern for the evolution of the debris population is the so-called Kessler effect’, which assumes that there is a certain collision probability among space objects because many satellites operate in similar orbital regions. These collisions create fragments, and thus additional objects in the respective orbits, which in turn enhances the risk of further collisions. Consequently, the number of objects and collisions increases exponentially and eventually results in the formation of a self-sustaining debris belt around the Earth. While it has long been assumed that such a process of collisional cascading is likely to occur only in a very long-term perspective (meaning a time 1 n of several hundred years),87 a consensus has evolved in recent years that an uncontrolled growth of the debris population in certain altitudes could become reality much sooner.88 In fact, a recent cooperative study undertaken by various space agencies in the scope of i a d c shows that the current l e o debris population is unstable, even if current mitigation measures are applied. The study concludes:

Even with a 90% implementation of the commonly-adopted mitigation measures [...] the l e o debris population is expected to increase by an average of **30% in the next 200 years.** The population growth is primarily driven by catastrophic collisions between 700 and 1000 km altitudes and such collisions are likely to occur every 5 to 9 years.89

**3] Status quo solves – mitigation and remediation compliance growing.**

**Colombo et. al 18**—Camilla Colombo, PhD, visiting academic in Spacecraft Engineering within Engineering and Physical Sciences at the University of Southampton; Francesca Letizia, PhD, Space Debris Engineer at ESA Space Debris Office; Mirko Trisolini, PhD, Postdoctoral researcher at the Politecnico di Milano Department of Aerospace Engineering; Hugh Lewis, PhD, Professor within Engineering and Physical Sciences at the University of Southampton (“Space Debris: Risk Mitigation,” from Frontiers of Space Risk: Natural Cosmic Hazards & Societal Challenges, Chapter 5, p 128-136)

5.4 MITIGATION MEASURES The space debris problem is nowadays internationally recognized, therefore mitigation measures are being taken and guidelines discussed. These can be divided into two classes: The avoidance or protection measures and the active and passive debris removal measures. The avoidance or protection measures include the design of satellites to withstand impacts by small debris, or the selection of safe procedures for operational spacecraft such as orbits with less debris, specific attitude configurations, or implementing active avoidance maneuvers to avoid collisions. On the other hand, measures for debris removal currently consist in limiting the creation of new debris (by prevention of in-orbit explosions and ensuring spacecraft subsystems reliability), to free some orbital implementing end-of-life disposal maneuvers protected regions, or to reenter in the atmosphere. Active debris removal is also being considered as a mean to stabilize the growth of space debris by removing from orbit some selected noncompliant objects. The e.Deorbit mission will target an ESA-owned derelict satellite in low orbit, capture it with a net or robotic arm technology, and reenter with a controlled atmospheric reentry (Biesbroek et al. 2014). Acknowledging the fact that the projected growth in the number of satellites orbiting the Earth will increase in the future, space agencies and international organizations have been discussing and building a set of guidelines to ensure the sustainability of future space activities. The InterAgency Debris Coordination Committee (IADC) was founded in 1993 by ESA (Europe), NASA (the United States), the Japan Aerospace Exploration Agency (JAXA, Japan), and the Roscosmos Russian Federation. As of January 2017, the IADC also includes the Italian Space Agency (ASI, Italy), the Centre National d'Études Spatiales (CNES, France), the China National Space Administration (CNSA, China), the Canadian Space Agency (CSA, Canada), the German Aerospace Centre (DLR, Germany), the Korea Aerospace Research Institute (KARI, South Korea), the Indian Space Research Organisation (ISRO, India), the National Space Agency of Ukraine (NSAU, Ukraine), and the UK Space Agency (UKSA, United Kingdom). This international cooperation decided a set of space debris mitigation measures (Inter-Agency Space Debris Coordination Commitee, 2002), which includes: 1. Limitation of debris released during normal operations. 2. Minimization of the potential for on-orbit breakups (resulting from stored energy after the completion of mission operations, or during the operational phases of the mission and by avoiding intentional destruction and other harmful activities). 3. Post Mission Disposal in particular in geosynchronous regions and for objects passing through the LEO region. 4. Prevention of on-orbit collisions. The IADC guidelines were presented to the United Nations Committee on the Peaceful Uses of Outer Space (UN COPUOS) and contributed to the creation of the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space to be considered for the mission planning, design, manufacture and operational phases of spacecraft and launch vehicle orbital stages” (United Nations Office for Outer Space Affairs 2010): 1. Limit debris released during normal operations. 2. Minimize the potential for breakups during operational phases. 3. Limit the probability of accidental collision in orbit. 4. Avoid intentional destruction and other harmful activities. 5. Minimize potential for post-mission breakups resulting from stored energy 6. Limit the long-term presence of spacecraft and launch vehicle orbital stages in the low Earth orbit region after the end of their mission. 7. Limit the long-term interference of spacecraft and launch vehicle orbital stages with the geosynchronous region after the end of their mission. 5.4.1 Mitigation Guidelines for Post Mission Disposal In this section we focus on the third of the measures dictated by the IADC, namely Post Mission Disposal. A “25-year rule” was defined to limit the presence of satellites in the LEO region to no more than 25 years after their decommissioning. The 25-year limit was selected to ensure that a reasonable reduction in lifetime could be achieved without greatly affecting satellite resources. After 25 years a satellite has to be removed from the LEO protected region by placing it in a graveyard orbit or by disposing of it through atmospheric reentry. According to the IADC Space Debris Mitigation Guidelines (Inter-Agency Space Debris Coordination Commitee 2002) if "a spacecraft or orbital stage is to be disposed of by re-entry into the atmosphere, debris that survives to reach the surface of the Earth should not pose an undue risk to people or property.” The low Earth orbit protected region (LEO region) is the spherical shell region that extends from the Earth's surface up to an altitude of 2000 km. The geosynchronous protected region (GEO region) is a segment of a spherical shell with a lower and upper altitude boundary of 200 km below and above the geostationary altitude of 35,786 km, and which is constrained by a latitude sector extending between plus and minus 15 degrees from south to north (Inter-Agency Space Debris Coordination Committee 2002; United Nations Office for Outer Space Affairs 2010). At altitudes below 600 kilometers, spacecraft with a conventional area-to-mass ratio (i.e., conventional satellites have a value of area-tomass ratio around 0.012 m?/kg) will reenter within a few years due to atmospheric drag. Intervention to remove and prevent further creation of debris above that altitude should therefore be the primary focus of passive mitigation measures. As described in the document on the “Requirements on Space Debris Mitigation for ESA Projects” (ESA 2008) and the "ESA Space Debris Mitigation Compliance Verification Guidelines” (ESA 2015), end-of-life measures can be distinguished in: (1) Disposal, (2) passivation, and (3) reentry. Required measures for disposal currently cover spacecraft in LEO and GEO through a series of Operational Requirements (OR) (ESA 2008): "OR-01. Space systems operating in the LEO protected region shall be disposed of by reentry into the Earth's atmosphere within 25 years after the end of the operational phase." "OR-02. Space systems operating in the GEO protected region shall be disposed of by permanently removing them from the GEO protected region.” The GEO disposal orbit should be almost circular (i.e., eccentricity less of equal to 0.005) and with a minimum perigee altitude above the geostationary altitude, which is given as a function of the solar radiation pressure coefficient of the space system at the beginning of its life and its cross-sectional area. This is done to take into account the eccentricity oscillation due to the effects of solar radiation pressure and to ensure that such oscillation would not make the orbit interfere with the GEO protected regions. "OR-03. Where practicable and economically feasible, space systems outside the LEO and GEO protected regions shall implement means of end-of-life orbit disposal to avoid long-term interference with operational orbit regions, such as the Galileo orbit." OR-04. Launcher stages shall also perform end-of-life disposal maneuvers by targeting "direct reentry as part of the launcher sequence.” Alternatively, they should be injected into a LEO orbit with a maximum reentry time of 25 years. As other space systems, they should be removed from LEO and GEO protecting region and orbit that interfere with other operational orbits such as the one of the Galileo orbit. OR-05. Passivation of the system (spacecraft or launcher stage) has to be completed within 2 months of the end of mission. End-of-life measures for reentry include: OR-06. "For space systems that are disposed of by reentry," an "analysis has to be performed to determine the characteristics of fragments surviving to ground impact, and assess the total casualty risk to the population on ground assuming an uncontrolled reentry.” OR-07. Such a casualty risk has to be lower than 10-4 if an uncontrolled reentry is targeted; otherwise if the casualty risk is higher than the threshold of 10-4, "a controlled reentry must be performed such that the impact footprint can be ensured over an ocean area, with sufficient clearance of landmasses and traffic routes." The rate of compliance of missions to the end-of-life mitigation guidelines was analyzed by the ESA Space Debris Office in 2017). Between 2006 and 2015, the rate of compliance of LEO missions (including naturally compliant missions and satellites performing end-of-life maneuvers) was 53.3% for the payloads (corresponding to 60.3% of the payload mass), reaching end of life in the LEO protected region (Frey and Lemmens 2017). The compliant objects, with a lifetime after decommissioning of less than 25 years, include naturally compliant objects due to their initial altitude well inside the Earth's atmosphere (this constitutes the biggest part of the compliant share), compliant objects after a deorbit maneuver, or spacecraft having performed a maneuver leading to a direct reentry. In terms of mass, this share is constantly sloping downward. Between 2007 and 2016, 71.6% of the rocket bodies reaching end of life in the LEO protected region was compliant, and this fraction has remained virtually unchanged for 8 years in a row despite an increase in end-of-life maneuver activity. 5.4.2 Passive End-of-Life Disposal In order to meet the mitigation guidelines LEO satellites at the end of their life would use the remaining propellant to perform either a perigeelowering maneuver (to decrease the orbit perigee well inside the Earth's atmosphere to guarantee a reentry within 25 years) or a direct reentry. Spacecraft in GEO are instead currently re-orbited to quasi circular orbits outside the GEO protected ring, with a perigee line aligned with the SunEarth direction (where possible) in order to bind the long-term oscillations in the eccentricity caused by solar radiation pressure. Recently, ESA funded projects on the design of disposal trajectories for medium Earth orbits (MEO) (Alessi et al. 2014; Rossi et al. 2015), highly elliptical orbits (HEO), and libration Earth orbits (LPO) (Armellin et al. 2014; Colombo et al. 2014; Colombo et al. 2015). These have demonstrated the possibility of exploiting natural orbit perturbations for designing passive mitigation strategies for debris disposal. Disposal strategies enhancing the effects of orbit perturbations have been further analyzed in LEO (Alessi et al. 2017), in MEO (Rosengren et al. 2015; Alessi et al. 2016; Armellin and San-Juan; Daquin et al. 2016; Gkolias et al. 2016), in GEO (Colombo and Gkolias 2017), and in HEO (Colombo et al. 2014; Armellin et al. 2015). Indeed, it was shown that, rather than performing an expensive maneuver to lower the perigee, the optimal maneuver should be given in a way to change the disposal orbit to another neighborhood orbit where the effect of orbit perturbations causes the orbit perigee to enter into the atmosphere. Indeed, the effects of luni-solar perturbation causes long-term oscillation on the eccentricity, which can be exploited so that the spacecraft's trajectory over a long period (from 5 to 70 years, depending on the initial orbit) could lead to natural reentry. This effect can be enhanced by solar radiation pressure, especially if considering a spacecraft equipped with large solar panels or a deployable reflective surface (Lücking et al. 2012, 2013). Moreover, resonances with the Earth's nonuniform potential can enhance the eccentricity growth effects. 5.4.2.1 An Example of End-of-Life Deorbiting Exploiting Luni-Solar Perturbations One of the most beautiful demonstrations of how natural dynamics can be enhanced is given by the INTEGRAL mission designed by ESA, the United States, Russia, the Czech Republic, and Poland. The INTErnational Gamma-Ray Astrophysics Laboratory, launched in 2002, gathered some of the most energetic radiation from space (Eismont et al. 2003). A reentry of this spacecraft with a pure impulsive maneuver would have not been possible due to the limited amount of propellant left onboard. In an ESA-funded study, the end-of-life disposal of INTEGRAL mission--expected to end in 2016-was designed with a time window for disposal between January 1, 2013 and January 1, 2029. Reentry solutions with a delta-velocity requirement below 40-50 m/s were found (Colombo et al. 2014). The main perturbations acting on the dynamics of the reentry were luni-solar perturbations, which affect the evolution of eccentricity, inclination, and anomaly of the perigee measured with respect to the Earth-Moon plane. It was shown that depending on the set of initial elements, which depends on the date the reentry maneuver is performed, the proposed maneuver would then aim at further increasing or decreasing the eccentricity. In particular, if we focus on the natural evolution of the eccentricity under luni-solar perturbation and Earth's oblateness, when the nominal eccentricity is low, the optimal reentry maneuver further decrease the eccentricity value; as a consequence, the following long-term propagation will reach a higher eccentricity, corresponding to a reentry. In this case, the maneuver is more efficient (i.e., lower delta velocity is required) (Colombo et al. 2014). Once the initial disposal maneuver is performed, the spacecraft evolves under natural perturbations and the reentry can then be semicontrolled. The high inclination of HEOs represents an advantage as the final reentry phase can target regions at higher latitudes on the Earth's surface thereby reducing the ground hazard. In the case of HEOs, reentry is caused by luni-solar perturbation (not air drag), therefore the orbit reenter with quite a high eccentricity (high apogee and low perigee) and does not circularize. Due to the oscillations in eccentricity, the next optimal window for injecting the spacecraft into a reentry trajectory is between 2013 and the first half of 2018 for a final reentry in 2028. After that, the required maneuver would increase until reaching a next window for performing the maneuver between the second half of 2021 and the first half of 2026, for a reentry in 2028. These analytical studies were used for high fidelity parametric analyses performed by the ESA (Merz et al. 2015) to investigate the effect of a maneuver at apogee to change the perigee altitude. The final maneuver sequence was given at the beginning of 2015 and split into three major burns plus a touch-up for final fine-tuning. The spacecraft is now on its course to reentry in 2028 (see Figure 5.11).

**4] Space debris is hype---there are thousands of satellites and only 15 debris collisions ever**

Mark **Albrecht 16**, Chairman of the board of USSpace LLC & fmr. head of the National Space Council, “Congested space is a serious problem solved by hard work, not hysteria, 5/9/16, https://spacenews.com/op-ed-congested-space-is-a-serious-problem-solved-by-hard-work-not-hysteria/

There are over a half million pieces of human-made material in orbit around our planet. Some are the size of school buses, some the size of BB gun pellets. They all had a function at some point, but now most are simply space debris littered from 100 to 22,000 miles above the Earth. Yet, all behave perfectly according to the laws of physics. Many in the space community have called the collision hazard caused by space debris a crisis.

Popular culture has embraced the risks of collisions in space in films like Gravity. Some participants have dramatized the issue by producing graphics of Earth and its satellites, which make our planet look like a fuzzy marble, almost obscured by a dense cloud of white pellets meant to conceptualize space congestion.

Unfortunately, for the sake of a good visual, satellites are depicted as if they were hundreds of miles wide, like the state of Pennsylvania (for the record, there are no space objects the size of Pennsylvania in orbit). Unfortunately, this is the rule, not the exception, and almost all of these articles, movies, graphics, and simulations are **exaggerated and misleading**. Space debris and collision risk is real, but it **certainly** is **not a crisis.**

So what are the facts?

On the positive side, space is **empty** and it is **vast**. At the altitude of the International Space Station, **one half a degree** of Earth longitude is almost **40 miles long**. That same one half a degree at geostationary orbit, some 22,000 miles up is over 230 miles long. Generally, we don’t intentionally put satellites closer together than one-half degree. That means at geostationary orbit, they are no closer than 11 times as far as the eye can see on flat ground or on the sea: That’s the horizon over the horizon 10 times over. In addition, other than minute forces like solar winds and sparse bits of atmosphere that still exist 500 miles up, **nothing gets in the way of orbiting objects** and **they behave quite predictably**. The location of the smallest spacecraft can be predicated within a 1,000 feet, 24 hours in advance.

Since we first started placing objects into space there have been 11 known low Earth orbit collisions, and three known collisions at geostationary orbit. Think of it: 135 space shuttle flights, all of the Apollo, Gemini and Mercury flights, **hundreds** of telecommunications satellites, **1,300 functioning satellites** on orbit today, **half a million** total objects in space larger than a marble, and **fewer than 15 known collisions**. **Why** do people **worry?**

### Advantage 2

#### The thesis of our link arguments impact turns the second advantage because the aff relies on western jurdicality into space a metric for resolving violence which only reinstates the violent nature of space colonialism onto the global south

#### Liberalism in space attempts to consolidate an unprecedented form of empire through making the empire the protectorate of the many through ignoring asymmetrical relations of power – this aporia is significant in liberal astropolitics, with disastrous results.

**Havercroft & Duvall** 9 [Raymond D. Duvall is a professor of Political Science at the University of Minnesota. Dr Jonathan Havercroft is Associate Professor in International Political Theory within Politics & International Relations at the University of Southampton. “Critical Astropolitics: The Geopolitics of Space Control and the Transformation of State Sovereignty: International Relations Theory and the Politics of.” In N. Bormann, & M. Sheehan (Eds.), *Securing Outer Space: International Relations Theory and the Politics of*(pp. 42-58). Routledge. //tjb]

Liberal-republican astropolitics Over the past twenty-five years, in a series of articles and recently a major book, Daniel Deudney has attempted to rework the tenets of geopolitics and apply them to the contemporary challenges raised by new weapons technologies – particularly nuclear and space weapons (Deudney 1983, 1985, 1995, 2000, 2002, 2007).4 **While Deudney finds geopolitical theory of the late nineteenth century and early twentieth century theoretically unsophisticated and reductionist, he believes that geopolitical attention to material conditions, spatiality, change, and political processes could form the basis of a theoretically sophisticated contextual–materialist security theory of world politics.** **Deudney starts from a premise about space weaponization similar to the core of Dolman’s astropolitik, namely that if any state were able to achieve military control of space, it would hold potential mastery over the entire Earth. One preliminary conclusion, however, seems sound: effective control of space by one state would lead to planet-wide hegemony.** Because space is at once so proximate and the planet’s high ground, one country able to control space and prevent the passage of other countries’ vehicles through it could effectively rule the planet. Even more than a monopoly of air or sea power, a monopoly of effective space power would be irresistible. (Deudney 1983: 17) **Rather than developing the implications of this as a strategic opportunity for any one state (e.g. the U.S.), however, Deudney sees it as a collective problem to be kept in check through collaboration; his project is to avoid space-based hegemony through cooperation among states. In a series of articles on global security written in the 1980s – while Cold War tensions between the U.S. and the U.S.S.R. continued to frame much theoretical discussion in international relations – Deudney saw the space age as a double-edged sword in superpower relations. On the one side, space weaponization posed a risk that the superpowers would extend their conflict extra-terrestrially and devise new, deadlier technologies that would enhance the risk of exterminating all of humanity; on the other, according to Deudney, the space age had found productive opportunities for the superpowers to deal with their rivalries in stabilizing collaboration.** He notes that the Sputnik mission, while in the popular understanding only an escalation of the Cold War, initially was the result of an internationally organized research program – the International Geophysical Year (Deudney 1985; though see Dolman 2002a: 106–107 for an alternate interpretation of these events as Cold War competition). Another example was President Eisenhower’s proposed “Atoms for Peace” project, which involved the great powers sharing nuclear technology with developing nations for energy purposes. Most famous was the collaboration between the Soviet Union and the U.S. during the 1970s on the rendezvous between an Apollo capsule and the Soyuz space station. Similar multinational collaborations continue to this day, with the most notable example being the International Space Station. **In addition to promoting collaboration, according to Deudney, the space age has also enhanced the ability of space powers to monitor each other – through spy satellites – thereby increasing the likelihood that they abide by arms control treaties. Deudney believes that these types of collaboration and increased surveil- lance could be strengthened and deepened so that great powers could be persuaded over time to “forge missiles into spaceships”** (Deudney 1985: 271)**.** In the 1980s this led Deudney to develop a set of specific proposals for a peaceful space policy, including collaboration between space powers on manned missions to the Moon, asteroids, and Mars. **The development of an International Satellite Monitoring Agency would make “space-based surveil- lance technology accessible to an international community” for monitoring ceasefires, crises, compliance with international arms control treaties, and the Earth’s environment** (Deudney 1985: 291)**.** These proposals are aimed at promoting collaboration on projects of great scientific and military signific- ance for the individual states. **Deudney’s expectation is that such cooperation would mitigate security dilemmas and promote greater ties between states that would co-bind their security without sacrificing their sovereignty.** **While Deudney has not been explicit about how his astropolitics of collaboration would alter world order, in his more theoretical writings he has elaborated the logic of a liberal-republican international system.** In a 2002 article on geopolitics and international theory, he developed what he called a ‘historical security materialist’ theory of geopolitics: “[I]n which changing forces of destruction (constituted by geography and technology) condition the viability of different modes of protection (understood as clusters of security practices) and their attendant ‘superstructures’ of political authority structures (anarchical, hierarchical, and federal-republican)” (Deudney 2002: 80). In that work, he identified four different eras in which distinct modes of destruction were predominant: Pre-modern; Early Modern; Global Industrial; and Planetary-Nuclear, as well as two modes of protection: real-statism, which is based on an internal monopoly of violence and external anarchy; and federal-republicanism, which is based on an internal division of powers and an external symmetrical binding of actors through institutions that reduces their autonomy in relation to one another. According to Deudney, in the Planetary-Nuclear age the federal-republican mode of protection is more viable because states “are able to more fully and systematically restrain viol- ence” than under the power balancing practices of real-statist modes of protection (Deudney 2002: 97; see also Deudney 2007: 244–277 for an elaboration of this argument). Although Deudney has not extended his “historical security materialist” approach into explicitly theorizing space weapons, per se (dealt with only tangentially and implicitly in the last two chapters of his recent book), his proposals during the Cold War to foster institutional collaboration between space powers as a way of promoting peace can safely be understood as a form of the mutually binding practices that he associates with the federal- republican mode of protection. In addition, one of the general conclusions that Deudney reaches about “historical security materialism” is that the more a security context is rich in the potential for violence, the better suited a federal-republican mode of protection is to avoid systemic breakdown. Therefore, it seems reasonable to conclude that within Deudney’s work is a nascent theory of how a federal-republican international system could limit conflict between space powers by binding them together in collaborative uses of space for exploratory and security uses. In this sense, Deudney can be read as the liberal-republican astropolitical counterpart to Everett Dolman.5 While Deudney’s astropolitical theorizations hold out the promise of a terrestrial pacification through space exploration it is interesting to note a significant aporia in his theory – empire as a possible mode of protection. **While real-statist modes of protection have an internal hierarchical authority structure, they are based on assumptions of external-anarchy, which is to say a system of sovereign states. Conversely, the federal-republican model is based on a symmetrical binding of units, in a way that no single unit can come to dominate others and accordingly in which they preserve their sovereignty** (Deudney 2000, 2002, 2007)**.** In a third mode, to which Deudney gives only scant attention, the case of empire, the hegemony of a single unit is such that other units are bound to it in an asymmetrical pattern that locates sovereignty only in the hegemon, or imperial center. Successful empires, including the Roman, British, and American, permit local autonomy in areas that are not of the imperial power’s direct concern while demanding absolute obedience in areas that are of vital concern to it, particularly when it comes to issues of security.6 Deudney’s implicit astropolitical theory thus ignores structurally asymmetric relations – in effect he ignores power. It is as if in wanting to have the world avoid the possibility of a planetary hegemony at the heart of the premise with which he and Dolman began their respective analyses, he white-washes it by failing to acknowledge the profound asymmetries of aspirations and technological–financial–military capacities among states for control of orbital space. In the next two sections we respond to Deudney’s call for “historical security materialism” by focusing on the premise that he skirts but that Dolman emphasizes, that military control of space means (at least the possibility of) mastery of the Earth. **Specifically we examine how a new mode of destruction – space weapons – is the ideal basis for the third mode of protection – empire – through its potential for substantial asymmetry. We argue that the power asymmetries of space weapons have very significant constitutive effects on sovereignty and international systemic anarchy, and underlie the constitution of a new, historically unprecedented, form of empire.** Before turning to that central thesis, however, we will first sketch the general contours of a critical astropolitics, which builds on the founda- tional premise of Dolman and Deudney, but modifies their theories in light of the significant insights of critical theory, particularly with respect to con- stitutive power. We ask: what consequences of astropolitics can a critical approach illuminate that may be concealed by an astropolitics informed by either liberal-republican or realist assumptions? How can insights offered by the revival of geopolitics in the writings of Deudney and Dolman – particularly the call for a new security materialist mode of analysis – be used to supplement and refine critical international relations theory?

### Solvency

#### No way to distribute resources – countries lack the tech – that wrecks solvency – neg on presumption

Way, Tyler A. (2018) "The Space Gap, Access to Technology, and the Perpetuation of Poverty," International ResearchScape Journal: Vol. 5 , Article 7. Accessed 2-1-20 CSUF JmB Districts

Global Positioning Systems (GPS), communications, internet, and weather satellites are some of the most prominent applications of human-made satellites orbiting earth. The phrase “Space Gap” refers to a capabilities gap formed between developed states that are capable of accessing the technological opportunities gained through space-faring and those developing states that either still have no access to those technologies or must pay exorbitant amounts of money to foreign governments for basic levels of access (Pappalardo). This analysis will focus on his work **regarding the development of space technology**, in particular, how **conflict serves as a necessary requirement for such development**. Fueling technology development are two drivers of innovation. **Whether space technology is created through technology-push and/or a demand-pull, the result is the same; both are incredibly vital to widespread innovation within technology policy and development** (Peters). Ruttan traces **the development of most weather, communications, and navigation satellite technology to their origins within NASA and the Department of Defense,** although these technologies nowadays are primarily used by civilian government agencies and purposes (Ruttan). Ozgur Gurtuna’s work (2013), on the other hand, further adds to the exploration of the economics that impact the evolution of private and public space sectors. He describes the revenue streams that are generated by the space industry

#### Normal means has the plan implemented through the *Committee on the Peaceful use of Outer Space.*

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The debate on how to distinguish airspace from outer space is as old as the space age itself. The problems emerging from space exploration first entered the agenda of the United Nations in 1957, and were later placed on the agenda before the General Assembly through the establishment of an Ad Hoc Committee on the Peaceful Uses of Outer Space (COPUOS) in 1958.' Although this Committee initially focused on the debate of disarmament, its status was later made permanent in 1961 while its charter was expanded to include examination of all issues relating to the field of exploration and use of outer space by governmental and non-governmental organizations.16 In 1962 the Scientific and Technical Sub-Committee and Legal Sub-Committee began their true substantive work and became the main center of international cooperation and coordination for exploration of peaceful uses of outer space." Successive sessions focused on general and specific issues of space law, including the establishment of a frontier between outer space and atmospheric space18.

#### OST Fails

**Evanoff 17** [Kyle Evanoff, Kyle is a research associate in international economics and U.S. foreign policy at the Council on Foreign Relations 10/10/17, "The Outer Space Treaty’s Midlife Funk," Council on Foreign Relations [https://www.cfr.org/blog/outer-space-treatys-midlife-funk accessed 12/11/2021](https://www.cfr.org/blog/outer-space-treatys-midlife-funk%20accessed%2012/11/2021)] Adam

Half a century later, however, the Outer Space Treaty has entered something of a funk. Despite the universal aspirations of the UN Committee on the Peaceful Uses of Outer Space, which molded the document into its completed form, many of the principles enshrined within the text are less suited to the present than they were to their native Cold War milieu. While the anachronism has not reached crisis levels, current and foreseeable developments do present challenges for the treaty, heightening the potential for disputes. At the crux of the matter is the ongoing democratization of space. During the 1950s and ‘60s, when the fundamental principles of international space law took shape, only large national governments could afford the enormous outlays required for creating and maintaining a successful space program. In more recent decades, technological advances and new business models have broadened the range of spacefaring actors. Thanks to innovations such as reusable rockets, micro- and nanosatellites, and inflatable space station modules, costs are decreasing and private companies are crowding into the sector. This flurry of activity, known as New Space, promises nothing less than a complete transformation of the way that humans interact with space. Asteroid mining, for example, could eliminate the need to launch many essential materials from Earth, lowering logistical hurdles and enabling largescale in-space fabrication. Companies like Planetary Resources and Deep Space Industries, by extracting and selling useful resources in situ, could help to jumpstart a sustainable space economy. They might also profit from selling valuable commodities back on terra firma. As a recent (bullish) Goldman Sachs report noted, a single football-field-sized asteroid could contain $25 to $50 billion worth of platinum—enough to upend the terrestrial market. With astronomical sums at stake and the commercial sector kicking into high gear, legal questions are becoming a major concern. Many of these questions focus on Article II of the Outer Space Treaty, which prohibits national appropriation of space and the celestial bodies. Since another provision (Article VI) requires nongovernmental entities to operate under a national flag, some experts have suggested that asteroid mining, which would require a period of exclusive use, may violate the agreement. Others, however, contend that companies can claim ownership of extracted resources without claiming ownership of the asteroids themselves. They cite the lunar samples returned to Earth during the Apollo program as a precedent. Hoping to promote American space commerce, Congress formalized this more charitable legal interpretation in Title IV of the 2015 U.S. Commercial Space Launch Competitiveness Act. Luxembourg, which announced a €200 million asteroid mining fund last year, followed suit with its own law in August. Controversies like the one surrounding asteroid mining are par for the course when it comes to the Outer Space Treaty. The agreement’s insistence that space be used “for peaceful purposes” has long been the subject of intense debate. During the treaty-making process, Soviet jurists argued that peaceful meant “non-military” and that spy satellites were illegal; Americans, who enjoyed an early lead in orbital reconnaissance, interpreted peaceful to mean “non-aggressive” and came to the opposite conclusion. Decades later, the precise meaning of the phrase remains a matter of contention. While the Outer Space Treaty has survived past disputes intact, some experts and policymakers believe that an update is in order. Senator Ted Cruz (R-TX), for instance, worries that legal ambiguity could undermine the nascent commercial space sector—a justifiable concern. Russia and Brazil, among other countries, hold asteroid mining operations to constitute de facto national appropriation. And while there are plenty of asteroids to go around for now (NASA has catalogued nearly 8,000 near earth objects larger than 140 meters in diameter), more supply-side saturation could lead to conflicts over choice space rocks. The absence of clear property rights makes this prospect all the more likely. Plans to establish outposts on the moon and Mars present a bigger challenge still. Last week, prior to the first meeting of the revived National Space Council, Vice President Mike Pence described the need for “a renewed American presence on the moon, a vital strategic goal” in an op-ed for the Wall Street Journal. His piece came on the heels of SpaceX Founder and Chief Executive Officer Elon Musk’s announcement at the 2017 International Astronautical Congress of a revised plan to colonize the red planet, with the first human missions slated for 2024. Musk hopes for the colony to house one million inhabitants within the next fifty years. While mining might require only temporary use of the celestial bodies, full-fledged colonies would necessarily be more permanent affairs. With some national governments arguing that mining operations would constitute territorial claims, lunar and Martian bases are almost certain to enter the legal crosshairs. And, even under the favorable U.S. interpretation of the Outer Space Treaty, states and private companies would need to avoid making territorial claims. If viable colony locations are relatively few and far between, fierce competition could make asserting control a practical necessity. Even so, policymakers should avoid hasty attempts to overhaul the Outer Space Treaty. The uncertainties associated with altering the fundamental principles of international space law are greater than any existing ambiguities. Commercial spacefaring already entails high levels of risk; adding new regulatory hazards to the mix would jeopardize investment and could slow progress in the sector. While the current property rights regime may be untenable over longer timelines, it remains workable for now.

#### All your solvency advocates assume the aff creates legal institutions and frameworks to create sustainable use of outer space – but you haven’t read an internal link that says simply the declaration of outer space as a global commons does that