# 1NC

## 1

#### Interp --- Outer space is the space between the atmospheres of celestial bodies

New World Encyclopedia ND [New World Encyclopedia, No Date, “Outer space” New World Encyclopedia, accessed 12-14-2021, <https://www.newworldencyclopedia.org/entry/outer_space> ww

Outer space (often called space) consists of the relatively empty regions of the universe outside the atmospheres of celestial bodies. Outer space is used to distinguish it from airspace and terrestrial locations.

#### New studies confirm that the atmosphere of the earth ends at 391,000 above earth

PBS NewsHour. “If This Space Study Is Right, Humans Have Never Left Earth’s Atmosphere.” PBS NewsHour, 28 Feb. 2019, www.pbs.org/newshour/science/if-this-space-study-is-right-humans-have-never-left-earths-atmosphere. Accessed 28 Jan. 2022.

The Earth’s atmosphere is described as a fragile coat wrapping around the planet, comparable in scale to an[apple’s skin protecting the fruit](https://twitter.com/neiltyson/status/723534428916486144). For more than half a century, even before the Apollo 16 mission captured the first [ultraviolet images of](http://pluto.space.swri.edu/image/glossary/geocorona2.html)Earth, researchers knew that the outermost atmospheric layer — the geocorona — extends far [beyond the denser, surface-level air that we breathe](https://en.wikipedia.org/wiki/Atmosphere#/media/File:Atmosphere_layers-en.svg).

Now, a [new study from Space Physics](https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2018JA026136) redefines the boundaries of our planet, based on overlooked data collected at the end of the last millennium. The report concludes that the edges of the atmosphere actually extend more than 391,000 miles from the planet’s surface, about twice as far as our moon.

#### Violation – LEO is within the earth’s atmosphere

[“Low Earth Orbit.” Esa.int, 2020, www.esa.int/ESA\_Multimedia/Images/2020/03/Low\_Earth\_orbit. Accessed 28 Jan. 2022.]

A low Earth orbit (LEO) is, as the name suggests, an orbit that is relatively close to Earth’s surface. It is normally at an altitude of less than 1000 km but could be as low as 160 km above Earth – which is low compared to other orbits, but still very far above Earth’s surface.

#### 1] Limits – allows them to have access to within the atmosphere as well, which is obv abusive, could be about the moon, specific sattelites or different relations adv

#### 2] ground – generics like asteroid mining or gget off the rock doesn’t apply motting ground

#### Voters -

#### 1] Education –.Specific education about the direct question the resolution asks is the only take away we get from this event. Breadth only spreads us thin and kills clash and deep understanding

#### 2] Fairness –. If the game stops becoming fair we have no reason to play in the first place, key to clash and is an internal link into any of their offense

#### Competing interps over reasonability – Reasonability is always arbitrary and can never set a Brightline on what is reasonable and what isn’t. Extra T is a question of models not specific affirmatives or rounds.

#### No RVIs on T–

#### A] baiting

#### B] illogical – don’t win for being fair

#### C] deterrs theory

#### Competing interps

#### Drop the debater to deter abuse

## 2

#### [Baudrillard 09] The plans elimination of private appropriation of space is part in parcel with the societal war against uncertainty. The aff’s seamless description of a shift from the world of private uncertainty, characterized by trying tp revent the [and partly because any orbital uncertainty is compounded year to year.] is the abolition of negativity. The plans scapegoating of private entities as the cause of ozone, nuclear warfare, and grid collapses is a form of whitewashing of history, a plastic surgery of the political sphere in service of the creation of a perfect world under the banner of utilitarianism

Baudrillard’09 |Jean Baudrillard, The Transparency of Evil, Page 41-45. Verso. 2009|KZaidi|recut PW

This society now produces only ill-defined events whose ultimate clarification is unlikely. In earlier times an event was something that happened - now it is something that is designed to happen. It occurs, therefore, as a virtual artifact, as a reflection of pre-existing media-defined forms.

The virus that wreaked havoc for five hours in the US scientific and military computer network may have been just a test (as Paul Virilio has suggested) - an experiment carried out by American military intelligence itself: an event at once stage-managed and simulated. Either a true accident, then, bearing witness to the effective virulence of such viruses, or a total simulation, showing that the most effective strategy today is calculated destabilization and deception. The verdict is not yet in. Even if the hypothesis of an experimental simulation were to be confirmed, moreover, this would in no way guarantee that the process involved was under control. A test virus can always turn into a killer virus. No one can control chain reactions of this kind, and any simulated accident is potentially an accident of simulation. What is more, we know that any natural accident or catastrophe may be claimed as a terrorist act, and vice versa. There is no limit here to the hyperbole of hypotheses. It is in this respect, in fact, that the whole system is globally terroristic. A greater terror than the terror of violence and accident is the terror of uncertainty and dissuasion. A few years ago a group that had staged a mock hold-up was penalized more heavily than they would have been for an actual robbery: the fact is that attacks on the reality principle itself constitute a graver offence than real-life violence. What is constant is an immense uncertainty, an uncertainty which lies at the core of the present operational euphoria. The natural sciences were the first to describe a panic situation of this kind: it is the disappearance of the respective positions of subject and object at the experimental interface that has given rise to a definitive state of uncertainty about the reality of the object and the (objective) reality of knowledge. Science itself seems to have fallen under the sway of its strange attractors. But the same goes for the economy, whose resurrection is apparently bound up with the total unpredictability that now reigns within it. Likewise the sudden expansion of data-handling techniques is seemingly tied to the indefiniteness of the knowledge with which these techniques are designed to deal. Are all techniques of this kind actively engaged with the real world? It is extremely doubtful. The aim of science and technology would seem to be much more that of presenting us with a definitively unreal world, beyond all criteria of truth and reality. The revolution of our time is the uncertainty revolution. We are not ready to accept this. Paradoxically, however, we attempt to escape from uncertainty by relying even more on information and communications systems, so merely aggravating the uncertainty itself. This is a forward flight: the pursuit race of technology and its perverse effects, of man and his clones, around a track in the form of a Moebius strip, has only just begun.

OPERATIONAL WHITEWASH

The uncertainty to which we are subject results, paradoxically, from an excess of positivity, from an ineluctable drop in the level of negativity. A kind of leukaemia has taken hold of our societies - a kind of dissolution of negativity in a perfused euphoria. Neither the French Revolution, nor the philosophy of the Enlightenment, nor critical utopianism has found its fulfilment through the supersession of contradictions, and if the problems they addressed have been solved, this has been achieved by casting off the negative, by disseminating the energies of everything condemned by society within a simulation entirely given over to positivity and factitiousness, by instituting a definitively transparent state of affairs. Ours is rather like the situation of the man who has lost his shadow: either he has become transparent, and the light passes right through him or, alternatively, he is lit from all angles, overexposed and defenceless against all sources of light. We are similarly exposed on all sides to the glare of technology, images and information, without any way of refracting their rays; and we are doomed in consequence to a whitewashing of all activity - whitewashed social relations, whitewashed bodies, whitewashed memory 44 in short, to a complete aseptic whiteness. Violence is whitewashed, history is whitewashed, all as part of a vast enterprise of cosmetic surgery at whose completion nothing will be left but a society for which, and individuals for whom, all violence, all negativity, are strictly forbidden. In these circumstances everything which is unable to relinquish its own identity is inevitably plunged into a realm of radical uncertainty and endless simulation. We are under the sway of a surgical compulsion that seeks to excise negative characteristics and remodel things synthetically into ideal forms. Cosmetic surgery: a face's chance configuration, its beauty or ugliness, its distinctive traits, its negative traits - all these have to be corrected, so as to produce something more beautiful than beautiful: an ideal face, a surgical face. Even one' s astrological sign, one' s birth sign, can now be revised so as to harmonize star and lifestyle : once a utopian notion, the idea of an Institute of Zodiacal Surgery where a few appropriate manipulations would affiliate you with your chosen sign is now clearly realistic. Even the sex to which we belong - that small portion of destiny still remaining to us, that minimum of fatality and otherness - will be changeable at will. Not to mention cosmetic surgery as applied to green spaces, to nature in general, to genes, to events, to history (e.g. the French Revolution revised and corrected - given a facelift under the banner of human rights) . Everything has to become postsynchable according to criteria of optimal convenience and compatibility. This inhuman formalization of face, speech, sex, body, will and public opinion is a tendency everywhere in evidence. Every last glimmer of fate and negativity has to be expunged in favour of something resembling the smile of a corpse in a funeral home, in favour of a general redemption of signs. To this end a gigantic campaign of plastic surgery has been undertaken.

#### [Baudrillard 83] “War is peace” – the development of nukes is a strategy of pacification and not destruction, the rhetoric of mass destruction is the perfection of the system of security and control that renders any revolution against the system impossible

[(Jean Baudrillard was a French sociologist, philosopher and cultural theorist. He is best known for his analyses of media, contemporary culture, and technological communication, as well as his formulation of concepts such as simulation and hyperreality.)Baudrillard, Jean, translated by Sheila Faria Glaser. Simulacra and Simulation. www.press.umich.edu/9900/simulacra\_and\_simulation. Accessed 26 Jan. 2022.|PW]

THE ORBITAL AND THE NUCLEAR The apotheosis of simulation: the nuclear. However, the balance of terror is never anything but the spectacular slope of a system of deterrence that has insinuated itself from the inside into all the cracks of daily life. Nuclear suspension only serves to seal the trivialized system of deterrence that is at the heart of the media, of the violence without consequences that reigns throughout the world, of the aleatory apparatus of all the choices that are made for us. The most insignificant of our behaviors is regulated by neutralized, indifferent, equivalent signs, by zero-sum signs like those that regulate the "strategy of games" (but the true equation is elsewhere, and the unknown is precisely that variable of simulation which makes of the atomic arsenal itself a hyperreal form, a simulacrum that dominates everything and reduces all "ground-level" events to being nothing but ephemeral scenarios, transforming the life left us into survival, into a stake without stakes - not even into a life insurance policy: into a policy that already has no value). It is not the direct threat of atomic destruction that paralyzes our lives, it is deterrence that gives them leukemia. And this deterrence comes from that fact that even the real atomic clash is precluded - precluded like the eventuality of the real in a system of signs. The whole world pretends to believe in the reality of this threat (this is understandable on the part of the military, the gravity of their exercise and the discourse of their "strategy" are at stake), but it is precisely at this level that there are no strategic stakes. The whole originality of the situation lies in the improbability of destruction. Deterrence precludes war - the archaic violence of expanding systems. Deterrence itself is the neutral, implosive violence of metastable systems or systems in involution. There is no longer a subject of deterrence, nor an adversary nor a strategy - it is a planetary structure of the annihilation of stakes. Atomic war, like the Trojan War, will not take place. The risk of nuclear annihilation only serves as a pretext, through the sophistication of weapons (a sophistication that surpasses any possible objective to such an extent that it is itself a symptom of nullity), for installing a universal security system, a universal lockup and control system whose deterrent effect is not at all aimed at an atomic clash (which was never in question, except without a doubt in the very initial stages of the cold war, when one still confused the nuclear apparatus with conventional war) but, rather, at the much greater probability of any real event, of anything that would be an event in the general system and upset its balance. The balance of terror is the terror of balance. Deterrence is not a strategy, it circulates and is exchanged between nuclear protagonists exactly as is international capital in the orbital zone of monetary speculation whose fluctuations suffice to control all global exchanges. Thus the money of destruction (without any reference to real destruction, any more than floating capital has a real referent of production) that circulates in nuclear orbit suffices to control all the violence and potential conflicts around the world. What is hatched in the shadow of this mechanism with the pretext of a maximal, "objective," threat, and thanks to Damocles' nuclear sword, is the perfection of the best system of control that has ever existed. And the progressive satellization of the whole planet through this hypermodel of security. The same goes for peaceful nuclear power stations. Pacification does not distinguish between the civil and the military: everywhere where irreversible apparatuses of control are elaborated, everywhere where the notion of security becomes omnipotent, everywhere where the norm replaces the old arsenal of laws and violence (including war), it is the system of deterrence that grows, and around it grows the historical, social, and political desert. A gigantic involution that makes every conflict, every finality, every confrontation contract in proportion to this blackmail that interrupts, neutralizes, freezes them all. No longer can any revolt, any story be deployed according to its own logic because it risks annihilation. No strategy is possible any longer, and escalation is only a puerile game given over to the military. The political stake is dead, only simulacra of conflicts and carefully circumscribed stakes remain. The "space race" played exactly the same role as nuclear escalation. This is why the space program was so easily able to replace it in the 1960s (Kennedy/Khrushchev), or to develop concurrently as a form of "peaceful coexistence." Because what, ultimately, is the function of the space program, of the conquest of the moon, of the launching of satellites if not the institution of a model of universal gravitation, of satellization of which the lunar module is the perfect embryo? Programmed microcosm, where nothing can be left to chance. Trajectory, energy, calculation, physiology, psychology, environment - nothing can be left to contingencies, this is the total universe of the norm the Law no longer exists, it is the operational immanence of every detail that is law. A universe purged of all threat of meaning, in a state of asepsis and weightlessness - it is this very perfection that is fascinating. The exaltation of the crowds was not a response to the event of Rinding on the moon or of sending a man into space (this would be, rather, the fulfillment of an earlier dream), rather, we are dumbfounded by the perfection of the programming and the technical manipulation, by the immanent wonder of the programmed unfolding of events. Fascination with the maximal norm and the mastery of probability. Vertigo of the model, which unites with the model of death, but without fear or drive. Because if the law, with its aura of transgression, if order, with its aura of violence, still taps a perverse imaginary, the norm fixes, fascinates, stupefies, and makes every imaginary involute. One no longer fantasizes about the minutiae of a program. Just watching it produces vertigo. The vertigo of a world without flaws. Now, it is the same model of programmatic infallibility, of maximum security and deterrence that today controls the spread of the social. There lies the true nuclear fallout: the meticulous operation of technology serves as a model for the meticulous operation of the social. Here as well, nothing will be left to chance, moreover this is the essence of socialization, which began centuries ago, but which has now entered its accelerated phase, toward a limit that one believed would be explosive (revolution), but which for the moment is translated by an inverse, implosive, irreversible process: the generalized deterrence of chance, of accident, of transversality, of finality, of contradiction, rupture, or complexity in a sociality illuminated by the norm, doomed to the descriptive transparency of mechanisms of information. In fact, the spatial and nuclear models do not have their own ends: neither the discovery of the moon, nor military and strategic superiority. Their truth is to be the models of simulation, the model vectors of a system of planetary control (where even the superpowers of this scenario are not free - the whole world is satellized).\*9 Resist the evidence: in satellization, he who is satellized is not who one might think. Through the orbital inscription of a spatial object, it is the planet earth that becomes a satellite, it is the terrestrial principle of reality that becomes eccentric, hyperreal, and insignificant. Through the orbital instantiation of a system of control like peaceful coexistence, all the terrestrial microsystems are satellized and lose their autonomy. All energy, all events are absorbed by this eccentric gravitation, everything condenses and implodes toward the only micromodel of control (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, in this forking of 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 the month of July 1975 illustrated this in a striking manner: the linkup in space of the two American and Soviet supersatellites, apotheosis of peaceful coexistence - the suppression by the Chinese of ideogrammatic writing and conversion to the Roman alphabet. The latter signifies the "orbital" instantiation of an abstract and modelized system of signs, into whose orbit all the once unique forms of style and writing will be reabsorbed. The satellization of language: the means for the Chinese to enter the system of peaceful coexistence, which is inscribed in their heavens at precisely the same time by the linkup of the two satellites. Orbital flight of the Big Two, neutralization and homogenization of everyone else on earth. Yet, despite this deterrence by the orbital power - the nuclear or molecular code - events continue at ground level, misfortunes are even more numerous, given the global process of the contiguity and simultaneity of data. But, subtly, they no longer have any meaning, they are no longer anything but the duplex effect of simulation at the summit. The best example can only be that of the war in Vietnam, because it took place at the intersection of a maximum historical and "revolutionary" stake, and of the installation of this deterrent authority. What meaning did this war have, and wasn't its unfolding a means of sealing the end of history in the decisive and culminating historic event of our era? Why did this war, so hard, so long, so ferocious, vanish from one day to the next as if by magic? Why did this American defeat (the largest reversal in the history of the USA) have no internal repercussions in America? If it had really signified the failure of the planetary strategy of the United States, it would necessarily have completely disrupted its internal balance and the American political system. Nothing of the sort occurred. Something else, then, took place. This war, at bottom, was nothing but a crucial episode of peaceful coexistence. It marked the arrival of China to peaceful coexistence. The nonintervention of China obtained and secured after many years, Chinas apprenticeship to a global modus vivendi, the shift from a global strategy of revolution to one of shared forces and empires, the transition from a radical alternative to political alternation in a system now essentially regulated (the normalization of Peking - Washington relations): this was what was at stake in the war in Vietnam, and in this sense, the USA pulled out of Vietnam but won the war. And the war ended "spontaneously" when this objective was achieved. That is why it was deescalated, demobilized so easily. This same reduction of forces can be seen on the field. The war lasted as long as elements irreducible to a healthy politics and discipline of power, even a Communist one, remained unliquidated. When at last the war had passed into the hands of regular troops in the North and escaped that of the resistance, the war could stop: it had attained its objective. The stake is thus that of a political relay. As soon as the Vietnamese had proved that they were no longer the carriers of an unpredictable subversion, one could let them take over. That theirs is a Communist order is not serious in the end: it had proved itself, it could be trusted. It is even more effective than capitalism in the liquidation of "savage" and archaic precapitalist structures. Same scenario in the Algerian war. The other aspect of this war and of all wars today: behind the armed violence, the murderous antagonism of the adversaries - which seems a matter of life and death, which is played out as such (or else one could never send people to get themselves killed in this kind of thing), behind this simulacrum of fighting to the death and of ruthless global stakes, the two adversaries are fundamentally in solidarity against something else, unnamed, never spoken, but whose objective outcome in war, with the equal complicity of the two adversaries, is total liquidation. Tribal, communitarian, precapitalist structures, every form of exchange, of language, of symbolic organization, that is what must be abolished, that is the object of murder in war - and war itself, in its immense, spectacular death apparatus, is nothing but the medium of this process of the terrorist rationalization of the social - the murder on which sociality will be founded, whatever its allegiance, Communist or capitalist. Total complicity, or division of labor between two adversaries (who may even consent to enormous sacrifices for it) for the very end of reshaping and domesticating social relations. "The North Vietnamese were advised to countenance a scenario for liquidating the American presence in the course of which, of course, one must save face." This scenario: the extremely harsh bombardments of Hanoi. Their untenable character must not conceal the fact that they were nothing but a simulacrum to enable the Vietnamese to seem to countenance a compromise and for Nixon to make the Americans swallow the withdrawal of their troops. The game was already won, nothing was objectively at stake but the verisimilitude of the final montage. The moralists of war, the holders of high wartime values should not be too discouraged: the war is no less atrocious for being only a simulacrum - the flesh suffers just the same, and the dead and former combatants are worth the same as in other wars. This objective is always fulfilled, just like that of the charting of territories and of disciplinary sociality. What no longer exists is the adversity of the adversaries, the reality of antagonistic causes, the ideological seriousness of war. And also the reality of victory or defeat, war being a process that triumphs well beyond these appearances. In any case, the pacification (or the deterrence) that dominates us today is beyond war and peace, it is that at every moment war and peace are equivalent. "War is peace," said Orwell. There also, the two differential poles implode into each other, or recycle one another - a simultaneity of contradictions that is at once the parody and the end of every dialectic. Thus one can completely miss the truth of a war: namely, that it was finished well before it started, that there was an end to war at the heart of the war itself, and that perhaps it never started. Many other events (the oil crisis, etc.) never started, never existed, except as artificial occurrences - abstract, ersatz, and as artifacts of history, catastrophes and crises destined to maintain a historical investment under hypnosis. The media and the official news service are only there to maintain the illusion of an actuality, of the reality of the stakes, of the objectivity of facts. All the events are to be read backward, or one becomes aware (as with the Communists "in power" in Italy the retro, posthumous rediscovery of the gulags and Soviet dissidents like the almost contemporary discovery, by a moribund ethnology, of the lost "difference" of Savages) that all these things arrived too late, with a history of delay, a spiral of delay, that they long ago exhausted their meaning and only live from an artificial effervescence of signs, that all these events succeed each other without logic, in the most contradictory, complete equivalence, in a profound indifference to their consequences (but this is because there are none: they exhaust themselves in their spectacular promotion) - all "newsreel" footage thus gives the sinister impression of kitsch, of retro and porno at the same time doubtless everyone knows this, and no one really accepts it. The reality of simulation is unbearable - crueler than Artaud's Theater of Cruelty, which was still an attempt to create a dramaturgy of life, the last gasp of an ideality of the body, of blood, of violence in a system that was already taking it away, toward 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 the master, and we only have a right to the retro, to the phantom, parodic rehabilitation of all lost referentials. Everything still unfolds around us, in the cold light of deterrence (including Artaud, who has the right like everything else to his revival, to a second existence as the referential of cruelty). This is why nuclear proliferation does not increase the risk of either an atomic clash or an accident - save in the interval when the "young" powers could be tempted to make a nondeterrent, "real" use of it (as the Americans did in Hiroshima - but precisely only they had a right to this "use value" of the bomb, all of those who have acquired it since will be deterred from using it by the very fact of possessing it). Entry into the atomic club, so prettily named, very quickly effaces (as unionization does in the working world) any inclination toward violent intervention. Responsibility, control, censure, self-deterrence always grow more rapidly than the forces or the weapons at our disposal: this is the secret of the social order. Thus the very possibility of paralyzing a whole country by flicking a switch makes it so that the electrical engineers will never use this weapon: the whole myth of the total and revolutionary strike crumbles at the very moment when the means are available - but alas precisely because those means are available. Therein lies the whole process of deterrence. It is thus perfectly probable that one day we will see nuclear powers export atomic reactors, weapons, and bombs to every latitude. Control by threat will be replaced by the more effective strategy of pacification through the bomb and through the possession of the bomb. The "little" powers, believing that they are buying their independent striking force, will buy the virus of deterrence, of their own deterrence. The same goes for the atomic reactors that we have already sent them: so many neutron bombs knocking out all historical virulence, all risk of explosion. In this sense, the nuclear everywhere inaugurates an accelerated process of implosion, it freezes everything around it, it absorbs all living energy. The nuclear is at once the culminating point of available energy and the maximization of energy control systems. Lockdown and control increase in direct proportion to (and undoubtedly even faster than) liberating potentialities. This was already the aporia of the modern revolution. It is still the absolute paradox of the nuclear. Energies freeze in their own fire, they deter themselves. One can no longer imagine what project, what power, what strategy, what subject could exist behind this enclosure, this vast saturation of a system by its own forces, now neutralized, unusable, unintelligible, nonexplosive except for the possibility of an explosion toward the center, of an implosion where all these energies would be abolished in a catastrophic process (in the literal sense, that is to say in the sense of a reversion of the whole cycle toward a minimal point, of a reversion of energies toward a minimal threshold).

#### [**Öberg 16**]The investment in this doctrine of transparency is a militaristic tactic of liberal warfare that violently transcribes existence as a calculable object for manipulation and shuts down deliberation

Öberg 2016 Dan Öberg is a Senior Lecturer of War Studies, Department of Military Science at the Swedish Defense University in Stockholm. War, transparency and control: the military architecture of operational warfare, Cambridge Review of International Affairs, 2016 Vol. 29, No. 3, 1132–1149, msm

However, the alleged benevolent links between transparency and governing have also been questioned, giving rise to arguments that ours is an era subject to an ideology of transparency. This latter view points to transparency being not so much a means for more humane governance as a “hegemonic” or “tyrannical” technique for enabling violent social control (Virilio 1989; Baudrillard 1994a). In line with this, transparency can be understood as part of political governance. As Dillon and Reid have argued, global liberal governance tends to be perceived as a project of social transformation constituted by violent practices of control. Moreover, as they have illustrated, the logic of contemporary war is instituted on the dynamics and imperatives of liberal peace (see Dillon and Reid 2000; 2009). This article argues that transparency is one such means of control, particularly through the way it relates to warfare. In other words, transparency is not limited to “good goverance”, and the insistence that hegemonic visibility implies “tyranny” needs to be thought of as part of an attempt to understand the way liberal governance is enacted globally. In the critical debate on war there are a number of authors who have inquired into the way war enables violent boundary drawing and exclusions, depolitization and dehumanization, as a technique of control (see Behnke 2004; Jabri 2006; Wasinski 2011; Brighton 2013; Holmqvist 2013; Öberg 2014), but very little has been said about the way transparency relates to warfare in terms of global liberal governance. In an attempt to fill some of this gap, the article stages an encounter between critical debates on transparency and warfare as techniques of control, to provide a better understanding of how they work as part of a military imaginary. Underlying this is a concern with the political impact of the technical aspects of warfare.1 In operational warfare, the scale of warfare, the increased firepower, logistics and the emphasis on joint operations (Jordan et al 2008, 71–74), is often considered to have widened and deepened the battlefield. This in turn has given rise to a milieu—from the Gulf in 1991 or Kosovo 1999 to post-2001 Afghanistan—which has ushered war into a “post-heroic era” (Coker 1998; Luttwak 2002) and turned it into ‘a permanent social relation’ that dissolves spatio/temporal limits (Hardt and Negri 2004, 13–15). As has been argued, this milieu/relation gives rise to a type of violence which risks replacing warfare with the processing of organizational models (Nordin and Öberg 2015). At the heart of the technical representation and practice of warfare lies the ideal of the comprehensive, networked and effects-based war. This is a discourse less concerned with traditional aspects of warfare—such as combating the enemy on a demarcated field of battle—and more focused on global war as an efficient operational process. Through operational planning the military has strived to become focused on mobilizing, manoeuvring and managing warfare in a transparent fashion. Arguably, it is by engaging with the technical representation of warfare and the way it is coded as warfare that we might better understand the political aspects of the technicalities of war. By examining the way warfare is organized and administered through military strategies of coding, particularly engaging with Jean Baudrillard’s writing on transparency, this article reads military doctrine documents as part of the way in which control is socially manufactured through the operationalization of time and of space.2 The first part of the article outlines the relationship between warfare and control. It shows that contemporary warfare needs to be thought of not as the “how” of war, but as an integral part of what Dillon and Reid have called “the liberal way of war” (2009). The second part discusses the way transparency relates to control. It draws mainly on the thinking of Baudrillard in order to give a detailed account of the way visibility works as a hegemonic ideology. The third part deepens the previous discussion by relating warfare to this ideology. It points out that military discourse needs to be read through the logic of networked violence that aims to render not only the global battlefield, but also itself, transparent. The final parts examine the way military discourse codes warfare as operational and the way this indicates a technique of control over space and time. In doing so, it inquires into the technical aspects of operational warfare and illustrates a self-enclosed discourse which helps to govern the present by attempting to violently and preemptively intercept anything interfering with liberal governing. The paper ends by arguing for the need to challenge the military architecture, not with more or better visibility, but by scrutinizing the logic of unveiling as a means of social control. Warfare and control In what way does warfare relate to social control? Historically, war studies and military science, as well as military doctrine in general, tend to understand warfare as the how of waging war, typically involving force-on-force military operations on a demarcated field of battle (Creveld 1991, 10; Gat 2006, 9; Keegan 2004, 28; US DOD 2013, I2). That is, warfare as the “how” of war tends to be reduced to the application of military battlefield tactics taking place in a more or less demarcated space/time. As Caroline Holmqvist has stated, the focus on the question of “how” risks making the method of war a preoccupation in its own right. Moreover, this might lead to a neglect of the way warfare is always already interlinked with dominant legal, political and colonial discourses (Holmqvist 2010, 111–113; Mbembe 2003, 25; Pretorius 2008, 114). As part of attempts to understand warfare beyond such a ‘bare technique’ so as to properly conceive of it as ‘a technological instrument in the management of a global(ised) system’ (Behnke 2006, 937), there have been a number of empirical studies which relate warfare (and predominately Western military imaginaries) to discourses of control. They have studied the relationship between control and industrialized-mechanized warfare (see Bousquet 2009), network-centric warfare (Lawson 2011), the interplay between military representations of strategy (Wasinski 2011), and the co-constitutive aspects of fighting and political theory (Brighton 2013). As Dillon and Reid (2000, 2001, 2009) argue in their work on “the liberal way of war”, to understand global warfare, we need to investigate the way it exerts control as a specific liberal practice. They suggest that: the liberal way of rule … necessarily correlates with its own brand of war-making … (and is) … shaped by its commitment to war, and the exigencies not simply of war-making but of the continuous state of emergency and security as well as constant preparedness for war, which characterize liberal rule as such. (Dillon and Reid 2009, 8) This is one reason why it makes sense to turn to the various preoccupations that characterize the discursive character of liberal regimes: knowledge networks, complexity, self-adaption (Dillon and Reid 2001, 45) and, in addition to this, transparency. Although a plural and complex enterprise, global liberal governance is comprised of techniques on managing populations that operate a strategic game highly dependent on assimilating war into its practices of power (Dillon and Reid 2001, 41–42). Both historically and in the present, liberal wars, most notably the US-led counterinsurgency wars in Iraq and Afghanistan, reflect the countries that wage them. They rest on the policing of a foundational narrative of emancipation and humanitarian values. Such policing points towards an increasing logic of surveillance against the movements of populations and thereby risks leading to an “unending war” directed against the uncertainty and interconnectivity of political life. The current militarization of the refugee situation in the Mediterranean is one case in point. In fact, other areas such as aid-work can be seen as a complementary strategic facet which relies on military interventions to clear the way and to protect. This is what has been known as the “Humanitarian Empire” (Duffield 2010, 69; Evans 2013, 47; see also Holmqvist 2014). It is interesting, moreover, to consider the way war and practices of liberal peace came together in the “war on terror”. This conflation can be seen in how strategies of violent interventions are committed to the advancement of liberalism as a social organization. One example is the way liberalism is based on rational means and ends deliberation that neglects how wars of “emancipation” involve radically different perspectives on life, consequently leading to depolitization and dehumanization of the Other. This in turn suggests that liberal warfare stems out of liberal peace interventionism and principles of ‘total governance’ (Behnke 2004, 280–287; Bell 2011, 310–312, 323–325; Duffield 2010, 53–56). As Brad Evans has argued, even humanitarian intervention rests upon an ‘operative fabric of … faith’ which leads to a politics of pre-emption (2013, 179). Indeed, as we shall see in the final parts of this article, such logic is an integral part of the operationalization of warfare. However, before we do so, the following sections turn to Baudrillard, to better unpack the way warfare relates to transparency as a means of control. Transparency and control Already in the 1960s, French sociologist Jean Baudrillard warned of the way transparency works as an ideology of social control. In challenging transparency, Baudrillard has looked particularly at the way urban architecture combines mirroring and light with interconnected open spaces. He argues that these features stand in direct relation to what he calls “operational violence”: namely, that transparency is generated by operational modelling, algorithms, and the processing that occurs in networks and closed loops. This in turn gives rise to a type of alienation that violently circumscribes the subject from lived experience (Baudrillard 2005a, 43; 2005b, 25–38). Baudrillard spent considerable effort investigating the way operational violence and transparency are generated by capitalist and techno-scientific structures of production and liberation. Such structures in turn create systemic effects in which lived experience works as an expression of an ideological system based on total visibility (Baudrillard 1975, 54–64; 1994a, 61–73; 2005b, 17, 146). Baudrillard draws upon these insights in a number of ways, claiming that transparency indicates a subtle form of censorship or even a ‘terror’ as it makes the global subject hostage to the fluid and systemic aspects of various architectures of control (Baudrillard 1994b, 58; Baudrillard and Nouvel 2002, 9, 64). Understood in this way, architectures of control help to generate a ‘hegemonic visibility’ which is best characterized as a world ‘where everything must be immediately visible and immediately interpretable’ (Baudrillard and Nouvel 2002, 9). Arguably, the problem of control through transparency centres on how to ‘invest mental and visual space’ (Baudrillard 2014, 11). Control is enabled through summoning banal appearances that are “already there”—repeating and modulating themselves to infinity, according to the nuances of a programmed operational code (Baudrillard and Nouvel 2002, 63; Baudrillard 2014, 22–23). Baudrillard aptly summarizes this ideology as construing a world in which ‘everything is to be legible’, ‘visible’, ‘measurable’, ‘said, accumulated, indexed and recorded’ (1990a, 34–35). In the wake of Baudrillard (and other thinkers like Foucault and Virilio), critical debate on the politics of transparency took off in the 1990s. Often situated as part of a critique of liberal governing, such research emphasizes three important points (see for comparison Mahmud 2012, 1196; Hansen and Flyverbom 2014, 875–876). Firstly, the notion of transparency is related to a modernist desire of democratic rationality. For example, it emphasizes displays and gives the illusion of choice, but works as an imperceptible limit which might trap subjectivity in particular organizational architectures (see Gabriel 2005; Schuman 2007; Nordin 2016). Secondly, transparency, regardless of its aims, tends to relate to surveillance, in turn making the notion strongly linked to social control. As Achille Mbembe has argued, both state and emancipatory violence has often been historically characterized by striving towards absolute transparency between the state and its people. Such a striving tends to be built on creating an open space in which ‘error’ is reduced, ‘truth’ enhanced and ‘aberrations’ eradicated (Mbembe 2003, 19). Thirdly, transparency is often considered to be a voluntary but necessary aspect of global capitalism. The insight that transparency works as a means of corporate control is evident in research which argues that media exposure and scientific progress often lead to less rather than more accountability in global capitalist structures. For example, exposure of certain issues tends to enable blind spots in other areas. Similarly, scientific discourse tends to remove ethical issues from the agenda by relying on a specialized language which is difficult for the layman to understand (Zyglidopoulos and Fleming 2011, 692–693). Arguably, these logics work as central dimensions in what we might call “an ideology of transparency” conflated with liberal core values. As Slavoj Zizek has illustrated, ‘ideology’ should not be taken to mean (as in the orthodox Marxist premise) a ‘false consciousness’. Rather it implies the formation of ‘a social reality whose very existence implies the non-knowledge of its participants as to its essence’ (Zizek 1989, 21). To outline and challenge transparency as an ideology is therefore not an attempt to unveil a “better” reality through theory. It is rather an attempt to understand, theoretically and empirically, what global liberal fantasies of making the world appear through techniques of total visibility do in terms of producing specific discourses as reality. As has been outlined, this ideology is present, and indeed produced, in distinct spheres such as information technology, corporate culture or knowledge algorithms (Valentine 2000; Zyglidopoulos and Fleming 2011; Hansen and Flyverbom 2014). But it is also an inherent part of the gendered and racialized visual regimes that underlie surveillance activities and security practices in contemporary Europe, for example in the way the “colonial gaze” persists through exoticizing difference (see Vaughan-Williams 2008; Jones 2011). This is evident particularly in the way transparency helps to create an impetus for racialized othering in a world in which “all is uncovered”. Transparency and warfare As the previous parts established, the logic of global warfare is characterized by its interrelation to liberal discourses of interventionism. Moreover, transparency needs to be understood, not as “good governance” but as part of an ideology which strives to render the world visible, measurable, indexed and recorded, so as to invest it as a mental and visual space. How does this ideology of transparency relate to global warfare? One of the few thinkers who have connected warfare with transparency as a means to control a battlefield is Paul Virilio. He explicitly locates an ideology of transparency as part of the military imaginary waging war. In doing so, Virilio argues that social control over demarcated spaces has given way to global control of the environment dependent on various techniques of transparency (such as aerial imagery or radar), often enacted through military vision (Virilio 1989, 72; 2000a, 61). Tracing how the world gradually becomes more and more transparent as a result of the visualization of the battlefield, Virilio interprets historical events in warfare, such as the bombings of Belgrade by North Atlantic Treaty Organization (NATO) in 1999, as part of an attempt to extend a ‘matchless transparency’ to the globe (Virilio 2000b, 23). His argument mirrors other critics of liberal warfare (often drawing upon Foucault) who state that when a population is targeted the consequences go beyond injury as it aims to pacify global subjectivity. For example, Vivianne Jabri has argued that technologies that target bodies and populations are not isolated occurrences but part of liberal governing (Jabri, 2006, 55). The argument that there is a politics that unfolds on the field of battle is also evident in Shane Brighton’s urging that the study of warfare should engage directly with ‘the killing mechanism on the battlefield’ so as to better grasp its politics (2013, 663–665). The point that warfare is about killing and violence is well taken. However, it might be a mistake to think of battlefield practices as the locus of the way warfare exerts control. Arguably, thinking warfare in this way indirectly helps to create a demand for more transparency on the field of battle. This is not to say that the “terror” Baudrillard identifies in the hegemonic visibility of modern life is any less relevant when it comes to the battlefield, but simply that it extends beyond it. The “matchless transparency” that Virilio found in the Kosovo war was enacted not merely through the Belgrade bombings but also as part of the whole operational machinery which supported this effort. In fact, there is a whole subset of “supportive functions” which occur beyond the field of battle. Much of the military supporting systems can be interpreted as a design aiming to efficiently orchestrate combat.3 This design is called “operational warfare” and typically deals with planning, employment and the supportive functions of war (see Vego 2007; Olsen and Creveld 2011). The idea that warfare is operational underlies all US and NATO doctrine and can be exemplified by the way it is considered an “effects-based” process which is fought by being coordinated, modelled and planned (see AFDD 2007a, 1-2, 37-40). In fact, the military itself defines the art of operational warfare as the processes which ‘visualize how best to efficiently and effectively employ military capabilities ….’ (AFDD 2007b, 70). Let us, therefore, in order to better understand the relationship between warfare, transparency and control, consider the military architecture beyond the field of battle and the way it operationalizes warfare. As Antoine Bousquet has outlined, the military has been preoccupied for centuries with eradicating friction and uncertainty from warfare. In recent times, attempts to lift the ‘fog of war’ in order to get an omniscient, real-time view of the battlefield are often associated with ‘network centric warfare’ (Bousquet 2009, 215–234). While most authors emphasize the way network-centric warfare relates to information and communication, what concerns me here is not so much the alleged shift in warfare due to new technology. Rather, I find network-centric warfare interesting as part of an attempt to extend a “matchless transparency” to the global battlefield through a logic of operational violence. In fact, the core characteristics of network-centric warfare are part and parcel of operational warfare. As Steve Niva has shown, what today is called ‘shadow wars’ is to a large degree enabled as a result of organizational changes in American bureaucratic structures which stem out of network-centric warfare (Niva 2013, 197–198). It is therefore not far-fetched to examine military discourses in accordance with a logic that aims to create “hegemonic visibility” due to administrative and bureaucratic rituals. The historical attempt to lift the fog of war and create an omniscient view of the battlefield mesh well with the way modern life is characterized by hegemonic visibility, but with one important addition. As the following parts illustrate, the military fantasy to extend a “matchless transparency” by global war is directed towards its external surroundings—the deepened and widened global battlefield—but also towards itself as an organizational form. The self-referential repetitions and modulations according to programmed codes that Baudrillard claimed characterizes an ideology of transparency therefore need to be analysed as part of a military operational coding. The rest of the article examines this, by a reading of US military doctrine documents and manuals, in order to explore and investigate the implications of transparency as a technique of control. The military architecture as excess What does the inside of the military architecture look like? How does it invest space and time discursively as part of ‘its own brand of war-making’ (Dillon and Reid 2009, 8) and what self-images are “already there” modulated according to the codes of operational warfare? Military doctrines and manuals are characterized both by discursive content and by the hierarchical and syntactical architecture they form (Ansorge 2010, 362–363, 377). The easiest way to encounter doctrines is as part of doctrine trees clustering through hyperlinks into open-source documents available online. The fact that such documents are “official” creates a self-evident hierarchy between representations, as the doctrines represent an official version of warfare in a synchronized manner, “one click away”.4 Such dissemination creates a technical and transparent modus operandi. The architecture of military doctrines codes warfare as part of a discursive shift that emphasizes “post-heroic” aspects of war. This shift is evident in that warfare is understood to be a matter of “administrative processing” that functions in the same way as a “telecommuting job for office workers” (see Chamayou 2015a; Nordin and Öberg 2015). Let us consider the operational code through the way “geo-spatial intelligence” is collected by drones. Doing so one finds in the doctrines various displays of detailed ‘end to end architectures’ over organizational relations for tasking, collecting and processing data (US Air Force Instruction, 2012, 6). The doctrines string together dozens of abbreviations and combine them with features such as synchronization, integration, managing, assessment and facilitation, supposedly guiding “warfighting” integration at all levels of warfare (AFI 14–132, 7–15). This is but one example of the way the key aspects of warfare (and the factual issues or decisions it involves) appear as a flowchart of organizational routines written in a specialized and technocratic language. A common denominator of US military doctrines is the way warfare is modelled and rendered transparent as an operational and bureaucratic practice. The amount of “knowledge” in this architecture is excessive to the point where it makes oversight difficult. Consider how the US Department of Defense alone lists 80 joint publications ranging from various types of military operations, homeland defense and electronic warfare to logistics and personnel support. To this we can add hundreds of commission instructions, commission orders, staff policy documents and directives, not to mention the respective doctrine hierarchy of the military services. Taken together this documentation uncovers an operational, organizational and bureaucratic practice which comes out of an attempt to efficiently plan and conduct warfare. The doctrines thereby render warfare visible through an excess of information consisting largely of what resembles Orwellian “newspeak”, an excess of abbreviations, and a transparency of organizational routines (see for example AFDD 2013b, 8). The open and accessible form of warfare obscures the many extremely difficult decisions that are involved in waging war and that take place in briefings, staff meetings, analysis cells and other arenas where there is no transparency at all. But if one is to look for actual responsibility in a campaign, for possibilities of agency, or for old-fashioned concepts like glory or combat, there is very little in the doctrinal architecture. What we find is not warfare but operational warfare, more characterized by a PowerPoint slideshow at a business meeting than an old-fashioned “Clausewitzian” war.5 The point here is not simply to criticize military doctrines for masking certain content while creating smokescreens. Rather, I find it interesting that the excess of doctrinal hierarchies and forms and the newspeak of military doctrines obscure the way this operational coding enables a control of space and time. As argued in the introduction, the widening and deepening of the battlefield, and the dissolving of spatial and temporal distinctions that follows from this, is often considered to be a result of the way operational warfare has increased firepower, logistics and joint operations. However, in an era of drone warfare and global surveillance through space satellites, it is hardly a coincidence that military manuals and doctrines tend to talk about “operational environment”, “area of interest”, or even “the playbox” rather than the “battlefield”.6 One central tenet of the military architecture is that war is an activity that can be modelled, simulated and constructed through planning. Traditionally, war has been considered to be limited in space (through the battlefield) and in time (through distinctions between peace and war).7 The “already visible” coding of warfare enables ‘an operational environment that is ever expanding’ (AFDD 2007b, 1) which makes the space of war resemble the model of a global battlefield. The doctrinal organizational schedules work exactly the same at all times and make no distinction between peacetime and wartime (AFDD 2013b, 1, 37). The military architecture thereby codes space as an expanding area of operations and time as operational time (what is often called “battle rhythm”). The operational modelling of the space and time of warfare As the previous part illustrated, the military architecture is best understood through an excess of bureaucratic and administrative doctrinal details. But what happens when we focus on its outside? What do we see from within the military architecture? In what way are space and time coded through the imaginary of operational warfare? The military architecture arguably displays an obsession with rendering space and time visible through authority and control. Typically, when a military force is deploying it does so by establishing a whole life-world along with it. Moving troops, building camps and securing the surrounding area indicate techniques of control over what is called ROMO—the range of military operations—that is, time and space. Every military operation depends on proper air-, sea- and land-lines of communication. Such lines are transportation bridges to deploy and sustain forces within a particular area. In order to do so the military architecture depends on a system of supporting nodes such as airfields, ports and other locations, and every system depends on the extent to which it is able to visualize space and time, for example by keeping track of cargo, passengers, medical patients or property through real-time visibility (AFDD 4–0, 1–15, 27–33, 42–47). The modelling of warfare is both a way of preparing for what will occur in an area of operations and a means for conditioning this area of operation into a particular space/time. Military operations appropriate, visualize and control space by occupying roads, ports, airfields or airspace. Coding takes place through, for example, training cycles for deployment, and each step in such training amounts to repeating particular preparations. Taken together, they are considered to give all the necessary knowledge when deployed. One example is when, in the 2003 Iraq War, military intelligence or logistics was often considered to “drive” warfare. Consider the way in which inventions in logistics systems used delivery routes as mapping functions in order to render the surrounding “operational areas” as transparent as possible.8 This meant that logistics convoys made the area of operations appear. Ideally, that which occurred in relation to the “global area of operations” would then be screened out from within, and visualized in relation to this particular point of view. Therefore, the possibility to kill, for example by striking at a target, is indirectly produced as part of mundane tasks such as delivering food and supplies. Through the way it is made to appear, the battlefield became an indirect consequence of operational warfare. The time of warfare is coded as operational (a “battle rhythm”). This notion goes back to the perceived need to synchronize tactical, operational and strategic processes in order to coordinate the planning, preparation and execution of warfare. The “battle rhythm” is an attempt (together with notions like “zulu time”) to create a universal, military time zone which is staff-driven. The name “battle” basically means the same thing as “efficiency” in this context. The operational level of warfare is defined as a constant search for efficiency through coordination and ‘[i]t is essentially a schedule of important events which should be synchronized with the other Service or functional components and combined forces …’ (AFDD 2–8, 9), within a given space/time. However, such coding of space/time obscures that warfare works through specialized functions and compartmentalization in which all is reduced to practical questions and organizational routines. Warfare becomes a matter not of killing, not of ethics, not of politics, but of technical questions such as “Who is responsible for resources?”, or “Who commands which staff-processes?” or, put more bluntly: “When is the next staff meeting?” The doctrinal architecture on operational warfare is characterized by a constant, real-time coding of the world as an area of operations through planning and modelling. Consider how war games, concept creations and experiments are used in order to generate insights in the use of space and time in warfare by demonstrating future unanticipated consequences, vulnerabilities and concerns. This is done in order to fight more efficiently and to discover a more lethal relation to future space (AFDD 2011d, 40; AFDD 2011c, 40). The control of space/time is a key characteristic of a military discourse on operational warfare that looks for threat assessments of social activity to ‘predict future actions or provide advanced indications and warnings of attack’ (AFDD 2011b, 15; see also 24–25) and intelligence as a means to ‘forecast’ and ‘anticipate future conditions’ (AFDD 2011d, 25). Such forecasting has little to do with whether the monitoring affects the space/ time of one’s own forces, of neutral forces and of the enemy. It is the patterns and dynamics of the global life-world itself (for example, weather or socio-biological patterns) which needs to be monitored so as to render space/time transparent for targeting (see AFDD 2013b; US JFCOM 2011a; 2011b; White 2006; Brown 2007). That is, planning warfare obscures that the operationalization of space into a global area of operations and of time into an operational rhythm is a violent appropriation of lived space and time. As Brighton and others have pointed out, the battlefield involves a politics. However, warfare is not political, or violent, simply because of the way it kills, but also through the way its operationalization codes space/time as a derivate of global warfare. This also goes for the way the supporting functions of warfare involve a politics which occurs beyond the battlefield. The military discourse constantly interlinks knowledge from the global battlefield through feedback loops, validates it through more combat, and disseminates it into the structure of the architecture in a transparent fashion (see for example USAF 2014a, 10). In the liberal discourse, the increased transparency of an everexpanding battlefield is considered a stroke of luck. This is because it enables better information management that ‘may contribute in providing prompt, accurate intelligence … and … improving shared situational awareness’ which in turn might facilitate decision-making (’t Hart and Sundelius 2013, 453). However, such a view fails to recognize that terms like “situational awareness” and “accurate intelligence” are enabled, and thereby constructed as needs, not only through the uncertainty that violence brings, but also through the institutional and organizational demands that are ritualized in the supporting functions of warfare. The transparency of global warfare The global battlefield expands through the operational coding of a military architecture which constantly aims to make space and time a derivate of an operational planning model. As space is rendered visible as a global area of operations and time as a constant operational rhythm, the doctrinal architecture emphasizes that surveillance is on-going, seamless and comprehensive: ‘a network of interrelated, simultaneous operations that can, at any given time, feed and be fed by other operations’ (AFDD 2012, 4; see also 5, 52–55). Surveillance is a crucial part of global liberal control as it monitors the widened and deepened global battlefield. In this way it works as a ‘core function’ of warfare through the notion of ‘global strikes’ across the full spectrum of conflicts, ‘holding any target on the planet at risk’ (Deptula and Francisco 2010, 15; USAF 2014b, 8). The US military has massive systems at its disposal for surveillance. For example air, space and cyber operations centres and sensor systems are placed around the globe and in orbit. Consider the MQ-9 Reapers wide-area electro-optical and ground moving-target-indicator surveillance and the Gorgon Stare: a wide-area airborne surveillance system with a spherical array of many hundreds of video cameras for each drone (Deptula and Francisco 2010, 14). These sensors continuously transfer data globally (each covering about 100 square kilometres), which is processed and disseminated into ‘actionable intelligence’ that enables an ‘understanding of the operational environment’ (AFDD 2012, 2–3, 5). But what does such “intelligence” and “understanding” amount to? The ultimate dream of the military architects is that data might be ‘globally interconnected’ into an ‘end-to-end set of information capabilities for collecting, processing, storing, disseminating, and managing information on demand to warfighters…’ (US DOD 2009, 10). This future system in the making is called a “global information grid” (or GIG) and will work as a comprehensive database that functions as an operational code for how one might ‘efficiently plan and conduct warfare’. This is very much the end-point of the fantasy of network-centric warfare aiming to ‘achieve shared situational awareness, increased speed of command, a higher tempo of operations, greater lethality, increased survivability, and … operational synergy’ (AFDD 2007b, 21). The military goal is therefore to reach the point where all are interconnected and visible according to the logic of “global strike”. One example of this logic is the way surveillance anticipates control over the global operational environment through visual sensors, real-time threat predictions, weapons and warning systems, satellite surveillance or horizon scanning. This in turn implies a global, integrated, all-encompassing surveillance which scans capabilities, civil or bureaucratic activities and behaviours in general, as part of a network-centric and uninterrupted, on-going process (AFDD 2012, 52–55). It hardly needs mentioning that rendering areas (such as northern Pakistan) transparent through surveillance implies extreme violence. As one example, consider how US targeting methods against “insurgents” in Afghanistan at the end of the last decade started focusing more on networks (consider the call to target “skill-bearers” and “knowledge”).9 At face value, it might seem ironic that “knowledge”—a core value of the liberal imaginary if there ever was one—is made to appear a characteristic of enmity. However, if seen in relation to an architecture in which the global battlefield is ever-present in real time, it follows suit that the banality of everyday life appears as a target. The demand for unveiling space/times of war is well illustrated by the military method of analysing according to social and biological patterns. The main aim of such analysis is to ‘notice when something is out of the ordinary’ in relation to everyday behaviour and actions (US JFCOM 2011a, 21)—for example, to notice the types of people who go to the market, the times of day that children play outdoors, where and when groups of males meet, what the prayer times and prayer locations are, and so forth. The aim of this surveillance is to ‘understand’ the way in which patterns of a community’s ‘battle-rhythm’ emerge and are broken (US JFCOM 2011a, 20–22). The acts are then entered into a ‘plot-sheet’ with exact times so as to deduce large-scale patterns and ‘predict future enemy actions’ (US JFCOM 2011b, 173). This in turn creates potential objects which are erased through military targeting. The desire to predict and create the future as a threat constantly demands flows of more information, more visibility and more knowledge. Moreover, it constantly demands the means (such as weaponry, education, technology) to maintain this demand. Leading officers have illustrated this logic at its purest by arguing that the US needs to act more like ‘hunters’: The foundations of (the US military’s) achievement will hinge on the ability to sense, know, decide, and act ahead of our adversaries on a global scale. These technologies and challenges have trumped the buffer of geography that historically afforded us the luxury of time to think and act, demanding that we alter our … farmer-culture mind-set and begin to act more like hunters…. In the future, Air Force … professionals must assure the availability of information necessary to bring a strategy to a successful outcome well before we need it. (Deptula and Francisco 2010, 16, my emphasis) As Grégoire Chamayou has argued, one quintessential aspect of contemporary warfare post 9/11 is the fact that combat has in many ways been supplanted by “hunting”. This insight is important as it helps us understand part of the purpose of the immediate and all-encompassing unveiling of the globe. The underlying idea of warfare as a ‘manhunt’ is the attempt to keep any and all threats in check by simply erasing them at a higher pace than they form (Chamayou 2015b, 71). Operational warfare is conceived of as a technical and administrative process run by “hunters” who, as they peek into the military architecture, see themselves as being constituted through a continuous race towards the future. In sharp contrast to this military subject, the global object that is unveiled—be it a skill-bearer, a social pattern, a cluster of cell-phone signals, or a group of children gathering— resembles a target signature more than a human subject. In the self-enclosed network which connects a continuous, seamless collection of data, the military architecture creates an interior which revolves around the display of scenarios relating to global superiority, mobility and strike capacity. The end-point of operational space/time is the ‘ultimate position … the position of total control’ of the Earth (Lyndon B. Johnson, quoted in AFDD 2011d, 1). The methodology of operational warfare—the way it makes global space an area of operations and the past and the future a derivate of operational time— constantly strives towards this (imaginary) position of control. The importance of the operational coding of space/time cannot be overstated as it creates an underlying feature of a military imaginary which warns against being ‘a prisoner of the future’ as it aims to increase its ‘future impact’ (USAF 2014a, particularly 4–13). The goal is for warfare to be absolutely transparent—or “agile” as it is called in military discourse—so as to reduce its presence and footprint, improving response times, constantly streamlining the way it meshes with other war processes (AFDD 2013b, 2; AFDD 2013a, 19). In short, the end point of the military architecture is to control not only space and time, but also to make itself into a pure and transparent potentiality for warfare as control. Read in this manner, the military urge to render the world transparent and invest it as a mental and visual operational space and time becomes part of a liberal ideology that constantly strives to make the world visible, calculable, decipherable and foreseeable. The “ideology of transparency” therefore needs to be understood as interrelated with a liberal way of peace which constantly emphasizes transparency as “good governance”. But it also needs to be seen in relation to a type of “liberal warfare” which strives to operationalize a violence that is transparent not only to itself, but also to the global battlefield it renders visible. Conclusions and future challenges In this article I have argued for the need to examine the way warfare exerts control through discourses of transparency. In so doing I draw upon the insistence that we live in an era of ‘hegemonic visibility’ (Baudrillard 2014, 11) in which global wars are fought to extend a ‘matchless transparency’ (Virilio 2000b, 23) to the world. To analyse this, I have investigated military doctrines so as to illustrate how they render a mental and visual space and time of warfare visible through operational coding. I argue that this logic creates a military architecture characterized by an excess of Kafkaesque bureaucratic and organizational procedures in which warfare becomes a derivate of planning and modelling. At the end point of this logic we find a Weltanschauung characterized by US military operations conducted in ‘an operational environment that is ever expanding’ (AFDD 2007b, 1) where future threats are preemptively erased in real time. Such “transparent warfare” is closely connected to the “liberal way of war” as it helps to manage and mobilize visual regimes employed in and through warfare. One important point outlined in this article is the way the military architecture relies on an operational violence which cuts through political space and time and invests it as calculable, decipherable and foreseeable. The “hegemonic visibility” that Baudrillard has drawn our attention to is therefore an inherent part of the way the military architecture renders itself, the global battlefield and future political subjectivity transparent, and in doing so it helps to affirm a liberal way of life. Dillon and Reid have convincingly argued that the centre of gravity of the liberal way of war is the future itself (2009, 148). But while Dillon and Reid claim such policing centres around biopolitical stakes (particularly the discrimination of which life is worth living and which isn’t), I would argue that liberal control is also waged through the way it renders the future image of global time and space visible through operational coding. Henceforth, the targeting and erasure of future political subjectivity through hegemonic visibility play an important part in the way global liberal governance functions. Arguably, the most important impact of this technique is the way operational violence indicates a type of governing which aims to reduce space/time to a derivate of global warfare and cut it from its political potential. The form and the content of the military architecture—its excess of information coupled with the urgency to render the world transparent and control it—come together as an attempt to conduct a violent futurology which attempts to exhaust and govern the present. We are now in a position to better respond to the conundrum in the introduction of this article—that both the proponents of and those who challenge warfare invoke the need for increased transparency of the battlefield. Those who wish to see and construct the future battlefield rely on the details of its imagery in order to kill. Likewise, those who want to prevent or illustrate the unlawful nature of such attacks rely on virtual reproduction in order to know and prove that the attacks took place. However, if our contemporary world is understood to be enmeshed in an ideology of excessive visibility, the commonsensical answer “more transparency” becomes part of the problem rather than a solution. If seen accordingly, better visibility does not change the fact that control is exerted through the production of a constant demand for transparency that in turn masks the way the military architecture is founded on and enacts control through this very demand. As Chamayou has illustrated by quoting interviews with mutilated victims from drone attacks: When you ask Sadaullah, or Karim, or S. Hussein and others like them what they want, they do not say ‘transparency and accountability’. They say they want the killing to stop. They want to stop dying. They want to stop going to funerals—and being bombed even as they mourn. Transparency and accountability, for them, are abstract problems that have little to do with the concrete fact of regular, systematic death. (Chamayou 2015b, 149) Chamayou is no doubt correct in that more transparency is of little help to the victims of drone violence. However, as I have tried to illustrate in this article, it is not only the actual killings on the global battlefield but the way an ideology of transparency underlies the military supporting system which unveils warfare as a modelling and operationalization of administrative routines which manufacture such killings. If one is to challenge the way drones kill, one needs to understand the supporting system which creates a demand for the killing mechanisms. Every military “telecommuting office worker/hunter” is refracted in relation to an architecture that provides and manufactures an excess of visibility, invisible limits, illusions of choice, erasures and blind spots. This architecture creates a demand for a particular type of violence as it helps to unveil a world which is transparent, open-access, logical, measurable and always connected to the operational. This is not to say that operational warfare always works, or that the demand is always there. It is simply to say that operational warfare aims to keep the potential for violent techniques of control in place by unveiling itself as a particular kind of organizational routine. How would one challenge “transparent warfare”? If there is a “Baudrillardian” wager in relation to critiquing warfare as a means for control, it would arguably be that one needs to do so without reifying the value of transparency. Instead one should aim to ‘potentiate what is new, original, unexpected’ (Baudrillard 1990b, 148) in the military architecture itself. This article has strived to look for the potentially new in operational warfare, so as to tease out the politics of the processing and modelling of warfare. The challenge to “post-heroic” war consists in investigating the various logics of and consequences transparency has as a means for control. The novelty of this relation resides in the way warfare is not, as many tend to argue, first and foremost about a response to practical problems when conducting military operations. Rather, it is characterized by the potential to violently unveil global space (as an area of operations) and global time (as a battle rhythm) to maintain and control political becoming. It remains to be seen if it is possible to create hidden spaces and times, uncoded by operational warfare (see also Baudrillard 2014, 10), that are not conditioned by the hegemonic visibility of military architectures. In my view, to investigate and affirm such a project is a timely and important task for a future critical war studies.

#### [Baudrillard 93] The political has lost the will for positive action and now all that is left in the power of the masses is negation – Our alternative is the strategy of the masses

**Baudrillard, 93** (Jean, The Transparency of Evil: Essays on Extreme Phenomena, 1993, )

In Simmel's words, 'Negation is the simplest thing imaginable. That is why the broad masses, whose component elements cannot achieve agreement as to goals, come together here.' It is useless to expect a positive opinion or a critical will from the masses, for they have none: all they have is an undifferentiated power, the power to reject. Their strength flows solely from what they are able to expel, to negate - and that is, first and foremost, any project that goes beyond them, any class or understanding that transcends them. There is something here of a philosophy of cunning born of the most brutal experience - the experience of animals, or of peasants: 'They won't put that over on us again, we won't fall for their calls to sacrifice, or listen to their pie in the sky.' Profound disgust for the political order - though one that may well coexist with specific political opinions . Disgust for the pretension and transcendence of power, for the inevitability and abomination of the political sphere. Where once there were political passions, we now find only the violence peculiar to a fundamental disgust with everything political. Power itself is founded largely on disgust. The whole of advertising, the whole of political discourse, is a public insult to the intelligence, to reason - but an insult in which we collaborate, abjectly subscribing to a silent interaction. The day of hidden persuasion is over: those who govern us now resort unapologetically to arm-twisting pure and simple. The prototype here was a banker got up like a vampire, saying, 'I am after you for your money' . A decade has already gone by since this kind of obscenity was introduced, with the government's blessing, into our social mores. At the time we thought the ad feeble because of its aggressive vulgarity . In point of fact it was a prophetic commercial, full of intimations of the future shape of social relationships, because it operated, precisely, in terms of disgust, avidity and rape. The same goes for pornographic and food advertising, which are also powered by shamelessness and lust, by a strategic logic of violation and anxiety. Nowadays you can seduce a woman with the words, 'I am interested in your cunt' . The same kind of crassness has triumphed in the realm of art, whose mounds of trivia may be reduced to a single pronouncement of the type, 'What we want from you is stupidity and bad taste' . And the fact is that we do succumb to this mass extortion, with its subtle infusion of guilt.

## Case

#### 1AC Takaya et al 18 – neg on presumption, no def of what LEO is

ITU’s “first come, first served” principle is reaching its limits with current LSC projects and should be re-evaluated;

The main challenge ahead is not legal but technical and regulatory and consists in defining precisely what can constitute an exclusive use of an orbit and in translating such definition into a clear regulation or code of conduct.

#### 2 – circumvention, no legally binding

### AT space wars

#### There is no impact.

Von Fange **’**17 [Daniel Von Fange is a full stack developer that builds web platforms, with a particular interest in space applications. Kessler Syndrome is Over Hyped. May 21, 2017. braino.org/essays/kessler\_syndrome\_is\_over\_hyped/]

Kessler Syndrome is overhyped. A chorus of online commenters great any news of upcoming low earth orbit satellites with worry that humanity will to lose access to space. I now think they are wrong. What is Kessler Syndrome? Here’s the popular view on Kessler Syndrome. Every once in a while, a piece of junk in space hits a satellite. This single impact destroys the satellite, and breaks off several thousand additional pieces. These new pieces now fly around space looking for other satellites to hit, and so exponentially multiply themselves over time, like a nuclear reaction, until a sphere of man-made debris surrounds the earth, and humanity no longer has access to space nor the benefits of satellites. It is a dark picture. Is Kessler Syndrome likely to happen? I had to stop everything and spend an afternoon doing back-of-the-napkin math to know how big the threat is. To estimate, we need to know where the stuff in space is, how much mass is there, and how long it would take to deorbit. The orbital area around earth can be broken down into four regions. Low LEO - Up to about 400km. Things that orbit here burn up in the earth’s atmosphere quickly - between a few months to two years. The space station operates at the high end of this range. It loses about a kilometer of altitude a month and if not pushed higher every few months, would soon burn up. For all practical purposes, Low LEO doesn’t matter for Kessler Syndrome. If Low LEO was ever full of space junk, we’d just wait a year and a half, and the problem would be over. High LEO - 400km to 2000km. This where most heavy satellites and most space junk orbits. The air is thin enough here that satellites only go down slowly, and they have a much farther distance to fall. It can take 50 years for stuff here to get down. This is where Kessler Syndrome could be an issue. Mid Orbit - GPS satellites and other navigation satellites travel here in lonely, long lives. The volume of space is so huge, and the number of satellites so few, that we don’t need to worry about Kessler here. GEO - If you put a satellite far enough out from earth, the speed that the satellite travels around the earth will match the speed of the surface of the earth rotating under it. From the ground, the satellite will appear to hang motionless. Usually the geostationary orbit is used by big weather satellites and big TV broadcasting satellites. (This apparent motionlessness is why satellite TV dishes can be mounted pointing in a fixed direction. You can find approximate south just by looking around at the dishes in your northern hemisphere neighborhood.) For Kessler purposes, GEO orbit is roughly a ring 384,400 km around. However, all the satellites here are moving the same direction at the same speed - debris doesn’t get free velocity from the speed of the satellites. Also, it’s quite expensive to get a satellite here, and so there aren’t many, only about one satellite per 1000km of the ring. Kessler is not a problem here.

#### It's slow and in 140 years.

Drmola & Hubík **’**18 Mgr. Jakub Drmola, PhD, Political Sceince Professor at Masaryk University. Tomáš Hubík, Computer Science PhD Candidate at Charles University in Prague, Systems Dynamics UiB at the University of Bergen. [Kessler Syndrome: System Dynamics Model, Space Policy, 44–45, 29–39, ScienceDirect]//BPS

It must be stressed that the model was not designed with such long outlooks in mind, and many of the assumptions will certainly not hold over the next 200 years (such as static launch rate growth, size, and structure of the satellites, their lifetime, evasion rates, lack of mitigation, and many others). But in the overwhelmingly unlikely case that these assumptions stay true, the simulated outcome seems to suggest a collapse of sorts around the year 2163. However, it does not look like a suddenly triggered chain reaction leading to widespread fragmentation of the entire LEO but rather like a gradually reached point at which LEO is so full of debris, and the rate of active satellite fragmentation is so high (almost one every day) that the launches cannot keep up anymore. This is consistent with the findings reported by LaFleur and Finkelman, who found the debris system to be unconditionally stable [18], [19], [27].

#### No space war, and no impact if it does happen

Roger Handberg 17, Professor in the School of Politics, Security, and International Affairs at the University of Central Florida, 2017, “Is space war imminent? Exploring the possibility,” Comparative Strategy, Vol. 36, No. 5, p. 413-425

The assumption made is that space war will be successfully waged in both the heavens and on the Earth itself. This assumption, however, is grounded on several hypotheticals occurring. First, that total devastating strategic surprise can be achieved—the side attacked becomes so damaged and devastated that further resistance is impossible to sustain regardless of national will, since nuclear weapons overhang the entire enterprise. The analogy usually invoked for American audiences is a “Pearl Harbor” type attack. This scenario is premised on equivalent American incompetence and lack of readiness as exhibited in December 1941. One must note that Pearl Harbor ended as a strategic failure for Japan—it led to defeat because the attack mobilized U.S. power without hesitation, given the intense political divisions over whether to enter the worldwide conflicts already raging. The attack was a military failure because Navy carriers were not destroyed along with battleship row along with critical fuel facilities. Similar analogies invoke September 11, 2001 as the prototype for such attacks more recently, but the same caveats apply. Total surprise assumes that all relevant opponent systems and civilian assets are disabled and left vulnerable to follow on attacks. In fact, collapse of U.S. defenses leaves U.S. cities as hostages to the rulers of the heavens, or vice versa if the U.S. moves first. Space war is extremely destabilizing, as will be discussed, since survivability of one's strategic assets becomes problematic.

Second, surprise requires that sufficient offensive space assets be placed in orbit without triggering a response by other states—the scale of such technology deployment is in itself possibly self-defeating given high costs and a likely lack of launch capacity. In addition, much launch capacity is now international rather than national, so maintaining secrecy becomes even more difficult. Space as an operational environment suffers from excessive transparency, meaning any launches can be monitored and tracked by others with strong evidence as to what is being deployed. One must remember that the original satellite launches in the 1950s were accurately tracked by a British grade-school class as a science project. In addition, at least since the early 1960s, remote sensing has increased exponentially the global capability to detect buildup of military assets of differing types, whether in space or on the ground. Commercial remote-sensing capabilities further enhance the capacity to detect militarily relevant actions. For example, commercial imagery is accessed by private parties to monitor the North Korean missile and nuclear weapons programs, in effect expanding the capacity of the world to look in on various states' interior regions, scanning for relevant information, including weapons buildup and launch capabilities. Even construction of physical facilities for production of space assets or for other weaponry can be monitored, making surprise more difficult but not impossible, as demonstrated in earlier monitoring of North Korea and, in 1998, the nuclear tests by both Pakistan and India. That means if the ASAT weapons come from ground locations, there is a high probability that they can be detected but no guarantee exists that detection will in fact occur. The uncertainty will impact calculations of attack success.

Third, the most obvious initial attack of space-based assets will most likely come from cyber attacks, given that such actions do not necessarily require the scale of resources necessary for other modalities such as kinetic weapons, or even lasers or other energy-type weapons. One will have to position the weapons plus the infrastructure to permit rapid recycling of the weapons for the next attack. Firing off interceptors will likely be a one-off, meaning extremely precise targeting will be required if the attack is to be successful. Note that none of these systems require that individuals be placed in Earth orbit, despite the imagery describing such operations in fictional universes.

Deployment requires a large lift capacity for initial deployment plus replenishment of destroyed or inoperative space assets, since a space conflict assumes that assets will be lost either kinetically or be compromised by cyber or energy beams. In any case, the combatants must be able to recover their capabilities lost during the conflict; failure to do would mean defeat or at least stalemate, negating the reason for the attack. That raises a major question when one considers the problem or expectation that space war can be successfully conducted or defended. Operationally Responsive Space (ORS) remains a critical weak point for all potential space-war participants. Loss of space assets occurs routinely during operations, but actual combat losses can be exponential depending on the weaponry used, and replacing those losses becomes the race to the next level after the initial exchange or combat. Unfortunately, ORS remains a major weakness of the United States and likely other states; deploying replacement satellites remains a multiyear process, while launch capabilities are scheduled long in advance. The rise of multiple private-launch competitors may partially alleviate some of the delay but that remains problematic given that the military payloads may be competing with commercial vendors also trying to replace losses. The tradeoff is that. in principle, private-launch vendors may be able to do so more cheaply, but their capacity may be saturated by demand from the civil and commercial sectors, leaving few “uncommitted” launch options for military purposes. Normally this is not an issue, but the available launch options may be third party rather than national-flag carriers, which raises severe security concerns.

Fourth, several other assumptions become essential to make the strategy work, including that such an attack does not render Earth orbit so debris-saturated that further military space operations become impossible to sustain. Also, damage to civilian space assets remains, such that their continuation is possible if undamaged replacements can be quickly reintroduced to restart economically critical operations. Globalization has been fostered through satellite technologies. Their disruption can be devastating for all parties, regardless of who is the winner or the loser. What may occur is the graveyard of the modern economic system. No potential space participants would be immune to the damage, regardless of whether or not they were participants in the actual conflict.

Fifth, there must be no difficulty in separating potential targets from the enemy, allied states, and nonbelligerent states. This creates a situation in which the spread of space technologies globally complicates actions, expanding the range of participants beyond the combatants, much like earlier wars at sea, where there were the combatants' ships, along with those of nonbelligerents, including neutrals whom the combatants struggled to draw into the conflict on their side, or at least to render their services unavailable to the other side. The earliest discussion of space conflict was premised on Cold War analogies, meaning two major combatants, either U.S.–Russia, or U.S–-China, or even a three-way war. Presently, analyses focus on a bilateral conflict with the U.S. opposed to China and Russia. Whether that would occur is obviously unknown, despite political rhetoric about a Eurasia coalition of likeminded states. What it does is multiply the number of potential targets and complicates reactions to neutrals' actions to protect their interests or assets. The distinction between combatants and neutrals or third parties will be possibly blurred beyond separation. The byproduct of a kinetic space conflict is massive amounts of space debris, destroying or damaging most space assets regardless of their state sponsor or nationality. Initial attacks may be focused and precise, but the result is still the same. The debris generated by armed conflict will endure beyond the immediate clash. The obvious alternative is a strictly electronic attack on space assets' operating systems, leaving the satellites in orbit, although without the ability to move them or control possible erratic changes in orbit due to collisions with other space debris.

Other forms space war will take

Reality is more complicated—kinetic action produces debris, the ultimate deterrent to actual space war. Therefore, space war could likely track several distinct phases. The first is cyber attacks, which disable or destroy the working systems of the spacecraft or the ground-support network—in effect, a series of stealth attacks. Civilian satellites are extremely soft targets—defense requires a capacity to detect and analyze any attack on the spacecraft, not available presently for most commercial spacecraft due to cost considerations. Otherwise, one could use nuclear weapons to create electromagnetic pulses (EMP) which can fry unprotected electronics both in space and on the ground, depending on where the weapons are detonated. Interestingly, space war scenarios have some territorial war aspects in that any attacks on space assets will devastate both military and civilian targets without distinction between the war participants and civilians. Similar to unrestricted submarine warfare, all targets in the relevant area will become casualties or otherwise impacted in their operations.

Second, attacks that are conducted against the ground down links and/or communications systems, leaving the spacecraft without guidance or instructions, and also no information is returned to the commanders even if the satellites survive the initial onslaught. These can involve kinetic attacks against specific locations or insertion of special operations forces to render the facility inoperative. For example, antennas can be disabled or destroyed, disrupting operations until new facilities are brought online. Other alternatives could include kinetic weapons launched from space, “rods from God.”20 Air strike packages could include electronic warfare elements capable of scrambling or disrupting operations of such facilities even prior to physical strikes against the targets. Spacecraft not destroyed or disabled in the initial two stages of the attack can be directly attacked by “dazzling” their receivers, with laser impulses destroying the receivers for which there are few replacements without replacing the spacecraft physically.

Third, rapid replacement of inoperative satellites, regardless of the reasons, does not occur, which translates into a race for the third, possibly end, phase of the war, replenishment. Inability to replace losses may mean that none of the combatants are able to dominate in the end, meaning conventional conflict may be the outcome, although issues of global reach may confine conflicts to relatively small areas. In previous conventional conflicts, large-scale forces were moved, albeit slowly, across the globe to the conflict, i.e., Desert Shield morphing into Desert Storm after a nearly six-month buildup.

#### MAD checks space escalation – nuclear response and debris

Bowen 18 [Bleddyn Bowen, Lecturer in International Relations at the University of Leicester. The Art of Space Deterrence. February 20, 2018. https://www.europeanleadershipnetwork.org/commentary/the-art-of-space-deterrence/]

Fourth, the ubiquity of space infrastructure and the fragility of the space environment may create a degree of existential deterrence. As space is so useful to modern economies and military forces, a large-scale disruption of space infrastructure may be so intuitively escalatory to decision-makers that there may be a natural caution against a wholesale assault on a state’s entire space capabilities because the consequences of doing so approach the mentalities of total war, or nuclear responses if a society begins tearing itself apart because of the collapse of optimised energy grids and just-in-time supply chains. In addition, the problem of space debris and the political-legal hurdles to conducting debris clean-up operations mean that even a handful of explosive events in space can render a region of Earth orbit unusable for everyone. This could caution a country like China from excessive kinetic intercept missions because its own military and economy is increasingly reliant on outer space, but perhaps not a country like North Korea which does not rely on space. The usefulness, sensitivity, and fragility of space may have some existential deterrent effect. China’s catastrophic anti-satellite weapons test in 2007 is a valuable lesson for all on the potentially devastating effect of kinetic warfare in orbit.

#### No one’s going to war over a downed satellite

Bowen 18 [Bleddyn Bowen, Lecturer in International Relations at the University of Leicester. The Art of Space Deterrence. February 20, 2018. https://www.europeanleadershipnetwork.org/commentary/the-art-of-space-deterrence/]

Space is often an afterthought or a miscellaneous ancillary in the grand strategic views of top-level decision-makers. A president may not care that one satellite may be lost or go dark; it may cause panic and Twitter-based hysteria for the space community, of course. But the terrestrial context and consequences, as well as the political stakes and symbolism of any exchange of hostilities in space matters more. The political and media dimension can magnify or minimise the perceived consequences of losing specific satellites out of all proportion to their actual strategic effect.

#### Sat attacks don’t cause nuke war

Zarybnisky 18 [Eric J. Zarybnisky, MA in National Security Studies from the Naval War College, PhD in Operations Research from the MIT Sloan School of Management, Lt Col, USAF. Celestial Deterrence: Deterring Aggression in the Global Commons of Space. March 28, 2018. <https://apps.dtic.mil/dtic/tr/fulltext/u2/1062004.pdf>]

PREVENTING AGGRESSION IN SPACE

While deterrence and the Cold War are strongly linked in the public’s mind through the nuclear standoff between the United States and the Soviet Union, the fundamentals of deterrence date back millennia and deterrence remains relevant. Thucydides alludes to the concept of deterrence in his telling of the Peloponnesian War when he describes rivals seeking advantages, such as recruiting allies, to dissuade an adversary from starting or expanding a conflict.6F 6 Aggression in space was successfully avoided during the Cold War because both sides viewed an attack on military satellites as highly escalatory, and such an action would likely result in general nuclear war.7F 7 In today’s more nuanced world, attacking satellites, including military satellites, does not necessarily result in nuclear war. For instance, foreign countries have used highpowered lasers against American intelligence-gathering satellites8F 8 and the United States has been reluctant to respond, let alone retaliate with nuclear weapons. This shift in policy is a result of the broader use of gray zone operations, to which countries struggle to respond while limiting escalation. Beginning with the fundamentals of deterrence illuminates how it applies to prevention of aggression in space

#### No space war – it’s hype and systems are redundant

Johnson-Freese and Hitchens 16 [Dr. Joan Johnson-Freese is a member of the Breaking Defense Board of Contributors, a Professor of National Security Affairs at the Naval War College and author of Space Warfare in the 21st Century: Arming the Heavens. Views expressed are those of the author alone. Theresa Hitchens is a Senior Research Scholar at the Center for International and Security Studies at Maryland (CISSM), and the former Director of the United Nations Institute for Disarmament Research (UNIDIR) in Geneva, Switzerland. Stop The Fearmongering Over War In Space: The Sky’s Not Falling, Part 1. December 27, 2016. https://breakingdefense.com/2016/12/stop-the-fearmongering-over-war-in-space-the-skys-not-falling-part-1/]

In the last two years, we’ve seen rising hysteria over a future war in space. Fanning the flames are not only dire assessments from the US military, but also breathless coverage from a cooperative and credulous press. This reporting doesn’t only muddy public debate over whether we really need expensive systems. It could also become a self-fulfilling prophecy. The irony is that nothing makes the currently slim possibility of war in space more likely than fearmongering over the threat of war in space.

Two television programs in the past two years show how egregious this fearmongering can get. In April 2015, the CBS show 60 Minutes ran a segment called “The Battle Above.” In an interview with General John Hyten, the then-chief of U.S. Air Force Space Command, it came across loud and clear that the United States was being forced to prepare for a battle in space — specifically against China — that it really didn’t want.

It was explained by Hyten and other guests that China is building a considerable amount of hardware and accumulating significant know-how regarding space, all threatening to space assets Americans depend on every day. If viewers weren’t frightened after watching the segment, it wasn’t for lack of trying on the part of CBS.

Using terms like “offensive counterspace” as a 1984 NewSpeak euphemism for “weapons,” it was made clear that the United States had no choice but to spend billions of dollars on offensive counterspace technology to not just thwart the Chinese threat, but control and dominate space. While it didn’t actually distort facts — just omit facts about current U.S. space capabilities — the segment was basically a cost-free commercial for the military-industrial complex.

In retrospect though, “The Battle Above” was pretty good compared to CNN’s recent special, War in Space: The Next Battlefield. The latter might as well have been called Sharknado in Space – because the only far-out weapons technology our potential adversaries don’t have, according to the broadcast, seems to be “sharks with frickin’ laser beams attached to their heads!”

First, CNN needs to hire some fact checkers. Saying “unlike its adversaries, the U.S. has not yet weaponized space” is deeply misleading, like saying “unlike his political opponents, President-Elect Donald Trump has not sprouted wings and flown away”: A few (admittedly alarming) weapons tests aside, no country in the world has yet weaponized space. Contrary to CNN, stock market transactions are not timed nor synchronized through GPS, but a closed system. Cruise missiles can find their targets even without GPS, because they have both GPS and precision inertial measurement units onboard, and IMUs don’t rely on satellite data. Oh, and the British rock group Pink Floyd holds the only claim to the Dark Side of the Moon: There is a “far side” of the Moon — the side always turned away from the Earth — but not a “dark side” — which would be a side always turned away from the Sun.

More nefariously, the segment sensationalized nuggets of truth within a barrage of half-truths, backed by a heavy bass, dramatic soundtrack (and gravelly-voiced reporter Jim Sciutto) and accompanied by sexy and scary visuals.

Make no mistake there are dangers in space, and the United States has the most to lose if space assets are lost. The question is how best to protect them. Here are a few facts CNN omitted.

The Reality

The U.S. has all of the technologies described on the CNN segment and deemed potentially offensive: maneuverable satellites, nano-satellites, lasers, jamming capabilities, robotic arms, ballistic missiles that can be used as anti-satellite weapons, etc. In fact, the United States is more technologically advanced than other countries in both military and commercial space.

That technological superiority scares other countries; just as the U.S. military space community is scared of other countries obtaining those technologies in the future. The U.S. military space budget is more than 10 times greater than that of all the countries in the world combined. That also causes other countries concern.

More unsettling still, the United States has long been leery of treaty-based efforts to constrain a potential arms race in outer space, as supported by nearly every other country in the world for decades. Indeed, under the administration of George W. Bush, the U.S. talking points centered on the mantra “there is no arms race in outer space,” so there is no need for diplomat instruments to constrain one. Now, a decade later, the U.S. military – backed by the Intelligence Community which operates the nation’s spy satellites – seems to be shouting to the rooftops that the United States is in danger of losing the space arms race already begun by its potential adversaries. The underlying assumption — a convenient one for advocates of more military spending — is that now there is nothing that diplomacy can do.

However, it must be remembered that most space-related technologies – with the exception of ballistic missiles and dedicated jammers – have both military and civil/commercial uses; both benign — indeed, helpful — and nefarious uses. For example, giving satellites the ability to maneuver on orbit can allow useful inspections of ailing satellites and possibly even repairs.

Further, the United States is not unable to protect its satellites, as repeated during the CNN broadcast by various interviewees and the host. Many U.S. government-owned satellites, including precious spy satellites, have capabilities to maneuver. Many are hardened against electro-magnetic pulse, sport “shutters” to protect optical “eyes” from solar flares and lasers, and use radio frequency hopping to resist jamming.

Offensive weapons, deployed on the ground to attack satellites, or in space, are not a silver bullet. To the contrary, U.S. deployment of such weapons may actually be detrimental to U.S. and international security in space (as we argued in a recent Atlantic Council publication, Towards a New National Security Space Strategy). Further, there are benefits to efforts started by the Obama Administration to find diplomatic tools to restrain and constrain dangerous military activities in space.

These diplomatic efforts, however, would be undercut by a full-out U.S. pursuit of “space dominance.” This includes dialogue with China, the lack of which Gen. William Shelton, retired commander of Air Force Space Command, lamented in the CNN report.

Given CNN’s “cast,” the spin was not surprising. Starting with Ghost Fleet author Peter Singer set the sensationalist tone, which never altered. The apocalyptic opening, inspired by Ghost Fleet, posited a scenario where all U.S. satellites are taken off-line in nearly one fell swoop. Unless we are talking about an alien invasion, that scenario is nigh on impossible. No potential adversary has such capabilities, nor will they ever likely do so. There is just too much redundancy in the system.

## AT 2nd

#### we’re already prepared and easily fixable

Learn 1-4 [Joshua Rapp Learn. “Are We Ready for the next Big Solar Storm?” Astronomy.com, 4 Jan. 2022, astronomy.com/news/2022/01/are-we-ready-for-the-next-big-solar-storm. Accessed 28 Jan. 2022.] PW

Decades of learning Flares occur when electromagnetic radiation erupts from the Sun. These bursts often last a few minutes, though they are sometimes longer. They are sometimes associated with coronal mass ejections, which blow out gas material and magnetic fields. But not every solar flare or coronal mass ejection will have an impact on Earth; it depends on both the size of the burst and the direction it’s heading. If a solar flare occurs on the far side of the Sun, for example, it’s unlikely to affect us. Even if it does happen on the near side, the direction of the burst often misses us — as we’re quite far away and a relatively small target compared to the Sun. This occurred in 2001, for example, when one of the largest solar flares in recorded history exploded into a coronal mass ejection at a speed of [about 4.5 million miles per hour](https://earthobservatory.nasa.gov/images/1331/biggest-solar-flare-on-record). Luckily, it swept by us on its way into space. Technology was relatively simple in 1859 when the Carrington Event occurred, but it still had a big impact on telegraph lines. At the time, people had to unplug the wires to stop the sparks erupting from them. But they remained partly functional, thanks to the particles ejected from the flare that struck the current in the lines. “They actually had to unplug them, and they still had enough energy and currents to run for a period of time,” Halford says. There have been earlier solar flares whose impacts were felt on Earth, of course. A Sun storm that occurred in 993 A.D. left evidence on tree trunks that archaeologists still use today to date ancient wood materials, such as the [brief Viking settlement in the Americas](https://www.discovermagazine.com/planet-earth/yes-vikings-really-did-live-in-the-americas-1-000-years-ago). Another significant solar flare occurred during World War I. It wasn’t as large as the Carrington Event, but it still confused detection equipment. Technicians believed bombs were dropping when it was actually interference from the flare hitting the magnetosphere, Halford says. A large coronal mass ejection recently struck Earth in March 1989, and the resulting geomagnetic storm caused serious havoc on Earth. The flare knocked out the power grids in Quebec and parts of New England, as the utility company Hydro-Quebec was down for nine hours. Power transformers even melted due to an overloading of electricity in the grid. Safety measures That 1989 event finally got the attention of infrastructure planners. “Those are the kinds of things that we have really learned our lesson from,” Halford says. Power companies began building safety measures, such as tripwires, into the electricity grid to stop cascading failure. If power increases too quickly, these tripwires are programmed to switch off so that damage is limited and transformers don’t burn out as they did in 1989. Geomagnetic storms can also cause bit flips, surface charging or internal charging to satellites orbiting our planet — all things that occurred [this October](https://www.space.com/solar-storm-northern-lights-new-york) when a solar flare produced a coronal mass ejection and a geomagnetic storm that hit Earth. Satellites are particularly susceptible because they don’t benefit from the relative protection of our atmosphere. But most of the satellites launched in the past two decades have been built robustly enough that they are resistant to overcharging. The bit flips occur when ionized particles from the solar outbursts switch the function of memory bits. This can cause big problems for GPS satellites, which effect everything from navigation to precision drilling. Even banking relies on GPS satellite to dictate the timing of transactions. “That kind of failure would really hurt the economy,” Halford says. “It’s important and definitely something we should be worried about.” While satellites are now built more robustly, she adds that it’s unlikely a storm would take out enough GPS satellites to cause many larger problems, though. These problems can also sometimes be easily fixed by power cycling, or simply by restarting the affected device. The October flare caused some minor problems, but the Federal Aviation Administration didn’t report any major navigation issues, Halford says.

#### [Young 20] No asteroid collision – low prob & prefer NASA statistics

Young 20 [Young, Chris. “Some Researchers Claim We Are Overdue a Large Asteroid Impact.” Interestingengineering.com, Interesting Engineering, 24 Jan. 2020, interestingengineering.com/what-is-the-probability-of-a-huge-civilization-ending-asteroid-impact. Accessed 23 Jan. 2022.] PW

However, some of these space fragments do hit the ground. According to [NASA](https://www.wired.com/2013/02/asteroid-odds/), a meteor punched a hole in the rear end of an automobile in 1992, while a Connecticut dining room and an Alabama bedroom were also damaged by falling space debris in this century. And yet, there is no record of a human being having been killed by a small space rock in the last thousand years. But what of the big ones? Some scientists claim we are [overdue for an asteroid impact](https://www.forbes.com/sites/startswithabang/2016/12/14/no-earth-is-not-overdue-for-a-massive-asteroid-strike/#3a6a30714ccc) of the scale that took out the dinosaurs — as these happen approximately once every 50 to 60 million years. Meteor Crater Natural Landmark near Winslow, AZ, Source: [Dominic Jeanmaire/iStock](https://www.istockphoto.com/photo/meteor-crater-natural-landmark-near-winslow-az-gm1189920127-337097720) The assertion, however, is highly debatable. First off, when we're talking in a scale of probabilities based on tens of millions of years, a tiny fraction in either direction is still a difference of hundreds of thousands, even millions, of years. Secondly, the solar system is showing signs of relative tranquility. As the universe expands, stars move farther apart meaning fewer interactions between distant stars and space rocks, and less of a chance that a huge asteroid will have its trajectory altered to come hurtling in our direction. According to NASA, the probability of an asteroid capable of destroying a city striking Earth is 0.1% every year. If one of these does hit Earth, there is a 70% chance it will land in the ocean, and a 25% chance it will land over a relatively unpopulated area. This is what happened with [the Tunguska impact](https://interestingengineering.com/a-mysterious-asteroid-from-over-100-years-ago-has-inspired-new-impact-predictions) in Russia just over a hundred years ago. The odds of a 5-10 kilometer wide asteroid, the likes of which made the dinosaurs go extinct, hitting Earth is almost negligible at 0.000001%. Monitoring the skies NASA's [Near Earth Object program](http://neo.jpl.nasa.gov/risk/) monitors space rocks in our neck of the universe. It has compiled a risk table for all known Near-Earth Objects (NEOs). For each of these, NASA calculates the likelihood of an impact with Earth for the next 100 years. The brains behind the operation? The calculations are made by [Sentry](https://cneos.jpl.nasa.gov/sentry/intro.html), a highly automated collision monitoring computer system that scans the most up-to-date list of asteroids near Earth. The Torino Scale, which runs from 1 to 10, is used to assess the danger we face from any individual asteroid. At the moment, nothing on the table is rated above 1 on the Torino Scale, meaning that impacts are calculated as being extremely unlikely.