# 1AC R1 Colley

### 1

#### Communicative spaces such as debate are governed through biopolitical technologies of fluency which smooth over semiotic interruptions in search for stable and univocal operations. This bends bodies to align their speech patterns with compulsory able-bodiedness.

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Given that compulsory able-bodiedness emanates from everywhere and nowhere, it is perhaps more fruitful to parse this consensus through the mode by which compulsory able-bodiedness circulates and is translated across different ideas, practices, and institutions rather than isolating the specific sites where this consensus, this hegemony, is produced. For McRuer, “the experience of the able-bodied need for an agreed-on common ground” is a common experience that “links all people with disabilities under a system of compulsory able-bodiedness” (8), and I suggest that this “common ground” of disability oppression is a how as much as a where or a what. That is, a common ground is never just found, but must be cleared away and maintained with effort through time. “Fluency” can accordingly be understood as a technology operating at the intersection of biopower and hegemony that smooths over and straightens discontinuous semiotics, temporalities, and materialities to eliminate frictions within productive, biopolitical systems and thus secure social order within the material realm. An attention to fluency moves beyond the orthodox focus on ideology as the essential vehicle of hegemony to locate, alongside Jon Beasley-Murray’s notion of “posthegemony,” the production of consensus and the security of social order not within the realm of representation but the governance of bodies and life itself. Fluency attempts to regulate and collapse not merely the time between encounters, but the embodied time of encounter and access and judgment. Fluency attempts to cover over political spaces—to mitigate (when it cannot eliminate) interruption and disruption—thus facilitating in one move the rationalization and naturali- zation of embodied difference that seems to emanate from everywhere and nowhere, as if everyone agrees. But whatever else it may be, fluency is first a process enacted and lived within the material and corporeal. Here I start from the semiotic and expand outwards. The vast array of rhythms, semiotic modes, tempos, dictions, and (racialized or disabled) accents that constitute practices of aural “communication” have become the objective domain of the biomedicalizing industry of Speech-Language Pathology. Barry Guitar, in his well-used textbook on speech impediments, offers an exemplary definition of fluency: “simply as the effortless flow of speech” (13). Yet there is hardly anything simple about this definition, which is offered amid caveats and backtracking. Guitar readily admits (12) that fluency is difficult to pin down and that researchers within Speech-Language Pathology often focus on what it is not—namely, dysfluency. There are a few characteristics: Fluent speech is marked by a lack of hesitation, and Speech-Language Pathology is forced to make (dubious and highly arbitrary) distinctions between “normal” and “abnormal” hesitations (Goldman-Eisler) since breaks and hesitations crop up in all speech. Fluent speech is marked by rhythmical (read: thoroughly normalized) patterning. Fluent speech is similarly marked by the lack of “extra sounds” interjected into culturally dominant phonetic patterns. Fluency is defined by the overall rate of speech, which includes not just the rate of vocal flow but of information flow (Starkweather). And lastly, fluency is often defined by a lack of “effort” on the part of the speaker; a conceit of mastery over language that highlights the twinned meaning of “fluency.” Transposing this definition into a critical register, the “effortless flow of speech” can be read as a coordinated—yet often strained—performance of bending the energies and capacities of bodies toward stable and univocal futures. Autistics are compelled to restrict stimming, to sit on their hands (to have “quiet hands,” Bascom), and thereby reroute bodily capacities to the smooth performance of so-called intelligible communication. Dyslexic bodies that process information piecemeal and slowly are forced out of social time (Cosenza 7). As Zach Richter has argued, the facial tics and erratic gestures of dysfluent speakers are likewise never communicative inflections, but are made abject and cast out of the communicative realm altogether by what I am here calling technologies of fluency. Tics of loud cursing and grunting from a public speaker with Tourette’s are imagined as an interruption to communication. Dysfluencies are erased from closed captions and courtroom transcripts. What is thus left is a univocal and fluid semiotic operation that instrumentalizes our relations with others. Or more precisely, if fluency is a type of Foucauldian technology, then the function of this biopolitical strategy is to regulate and focus the communicative event toward specific, technical ends through the logic of optimization and closure.

#### The figure of the better than able-bodied Child circulates happy affects of pride, hope, cure, and progress, which sustains a neoliberal order whereby the promise of happiness shapes our affective dispositions. This affective economy determines the value and circulation of social goods which allows biocapitalism to frame disability through a narrative of overcoming suffering. This produces disability as tragedy, pity, and disgust.

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Indebted to the work of Henri- Bergson, Baruch Spinoza, and Gilles Deleuze and Felix Guarttari, affect can be conceptualized as pre-individual forces that augment or diminish a body’s capacity to act, engage, or connect. For Ahmed (2010), happiness involves affects in order for the objects of happiness to become social goods. That is, she argues that feelings do not reside within individual subjects and then move outwards towards particular objects but rather, she contends, objects create impressions through feelings (14). To feel happiness “is to recognize that happiness starts from somewhere other than the subject who may use the word to describe a situation” (21). And, as Ahmed continues, “If happiness creates its objects, then such objects are passed around, accumulating positive affective value as social goods” (21). Through the production of happiness, objects become social goods that have positive affective qualities. “To be affected ‘in a good way’ thus involves an orientation to something as being good” (24). Happiness is an affective economy that allows us to have contact with good objects. Since “we move toward and away from objects through how we are affected by them” (24), happiness orients what objects we come into contact with. That objects are considered happy or are considered the cause of happiness “means they already circulate as social goods before we ‘happen’ upon them, which is why we might happen upon them in the first place” (28). That is to say, the objects we encounter are never neutral. In order to happen upon an object, its affective value is already in place; the object is already invested with positive and negative value (34). As happiness is a shared social orientation toward what is good (56), going along “with happiness scripts” is a way of getting along; “to get along is to be willing and able to express happiness in proximity to the right things” (59). The ISA is, I argue, a site of affective happiness within neoliberalism and functions in such a way as to hamper the conditions necessary to dismantle ableism and compulsory able-bodiedness. In what follows, I trace the ways in which the production of disability has been built upon positive affects, and in turn, how the ISA is imbued with happy affects that capacitate certain forms of disability inclusion. I conclude by considering where the “cruel optimism” (Berlant 2010) of the ISA leaves disability scholars and activists who seek disability justice. The contemporary production of disability has been built on positive affects. The circulation of positive affects in the production of disability does not replace other modes of producing disability, but rather is layered within them. This is to say, the ways in which disability is produced through tragedy, pity, or disgust, are all tangled up with positive affects; all these forms of producing disability work together and re-enforce one another. From the demand to overcome shame and embody pride (Kolarova 2012), to the medically driven imperative to overcome suffering and embody an expression of hope (Fritsch 2013), the disabled have been positioned as the inspiring and courageous crip, the ones who will be cured through positive thinking, and as an individualized problem that is solvable. Disability is caught up in the ableist turn towards healthism and the imperative for everyone to have intensively enhanced bodies (see Chapter 3). From the oft-cited “Jerry’s Kids” (see Chapter 5), to the culturally ubiquitous inspirational quotes that mark disability as something to conquer and fight, happy affects of cure, overcoming, and progress are embedded in dominant conceptions of disability. Happy affects drive what McRuer (2006) has termed “compulsory able-bodiedness,” not only because people are invested in the “happiness scripts” of biological cures, narratives of overcoming, and the allure of technological advances, but because compulsory able-bodiedness is always, already, a social good in neoliberal capitalism. As such, the happy affects circulating by way of pride, hope, cure, or progress, end up retrofitting disability as “a vector of neoliberal governance” (Kolarova 2012, 268). Disability as thing, or disability as contained by the International Symbol of Access is not only knowable and profitable, but it is also the site of happy affects. By having the wheelchair symbol adorn a bus or a building, the problem and uncomfortableness of the difference of disability appears to be taken care of. With the appearance of the ISA, happy affects of having “done our duty for the disabled” circulate, even in the face of contested understandings of disability or accessibility.

#### The affirmative is not merely a war waged on futurity – we recognize that the battle must be fought within relationality and the figure of the Child. Instead, the aff complicates neoliberalism’s current investments in the future and negates the options it has offered us. The figure of the Child is understood for what it is, a regime of hygiene that co-constitutes disability, race, class, and queerness as sites of delimiting reproductive futurity. This is a demand for a better future, not for our children, but as an ethical call that affirms our relationality.

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However, as this chapter has shown, disability cannot operate in a full negation of the figure of the Child, or unequivocally embrace “no future” because disability is always already embedded in the production of the future as a future of technological and medical advances, of a future to be found through the saving grace of biocapitalism. The future is accessible, happy, hopeful, and inclusive, even when it is not (see Chapter 2). Disability, through neoliberal processes of capacitation and withering, participates in the formation of the figure of the Child, and this is precisely an important site of contestation. Commenting on Edelman and negating the future, the late Jose Esteban Muñoz writes in Cruising Utopia: The Then and There of Queer Futurity (2009): “...when I negotiate the ever-increasing sidewalk obstacles produced by oversized baby strollers on parade in the city in which I live, the sheer magnitude of the vehicles that flaunt the incredible mandate of reproduction as world-historical virtue, I could not be more hailed” (92) by the queer imperative to not fight for the children. But, Muñoz notes: “as strongly as I reject reproductive futurity, I nonetheless refuse to give up on concepts such as politics, hope, and a future that is not kid stuff,” (2009, 92) for “all children are not the privileged white babies to whom contemporary society caters” (2009, 94). Muñoz furthers “Racialized kids, queer kids, are not the sovereign princes of futurity. Although Edelman does indicate that the future of the child as futurity is different from the future of actual children, his framing nonetheless accepts and reproduces this monolithic figure of the child that is indeed always already white” (2009, 95). In addition to McRuer’s critique of the Child as always already able-bodied, other queer and disability studies scholars have echoed Munoz’s critique. For Alison Kafer writes that “this always already whiteness is a whiteness framed by and understood through regimes of health and hygiene” whereby racialized and queer kids cast out of reproductive futurity “have been and continue to be framed as sick, as pathological, as contagious” marking the co-constitution of race, class, and disability as delimiting reproductive futurity (2013, 32). This conclusion is also echoed by Chen (2011; 2012). Kafer (2013) and Muñoz agree that “It is important not to hand over futurity to normative white reproductive futurity” (Muñoz 2009, 95), for “The dominant model of futurity is indeed ‘winning,’ but that is all the more reason to call on a utopian political imagination that will enable us to glimpse another time and place: a ‘not-yet’ where queer youths of colour actually get to grow up” (Muñoz 2009, 96). Indeed, Muñoz comments that “The way to deal with the asymmetries and violent frenzies that mark the present is not to forget the future. The here and now is simply not enough” (Muñoz 2009, 96), leading Kafer to suggest that the task at hand is to “imagine disability and disability futures otherwise” (2013, 34). Following Muñoz (2009) and Kafer (2013), it is important to fight for the future, but to do so requires addressing the ways by which neoliberal futurity depends upon both negating the futures of disability while also promoting particular inclusions of disability. Thus, to underscore the epigraphs of this chapter, while the ableism that underlies the ways in which Kafer’s (2013) future is written on her body and the ways in which disabled lives are not tractable, these accounts do not mark the ways in which neoliberal futurity promotes and capacitates certain disabled lives so as to affirm particular forms of biocapitalism and the circulation of good feelings that has implications for the way in which disability can become in the world. It is not enough then, to invest in the neoliberal forms of capacitated futures of disabled people, but rather it is imperative to turn away from the future that is currently being served to us in the form of neoliberal biocapitalism that strives to foreclose the possibility of other worlds. Unlike Edelman (2004), I am interested in negating reproductive futurity not simply to negate the social order that relies on the Child, but rather to invest otherwise in social relations that complicate both this horizon and that of neoliberal biocapitalism that underlies our current interest in the future. What I want to suggest is that futurity is about the neoliberal imperative to manage risk, individualize access, and mobilize hope. The fight then, is not an anti-social turn away from the future entirely, but a negative turn away from the future that is currently forecloses the possibility of other worlds. It is a question of struggling for a better world, and demanding a better future, not for our individual selves, or for our children, but as an ethical jester of being of and within the world, whereby disability itself can only ever emerge within intracorporeal relations (see Chapter 6). Muñoz notes: “The act of accepting no future is dependent on renouncing politics and various principles of hope that are, by their very nature, relational” (2009, 94). If it is indeed within relations that disability emerges, then that is where the fight is to be had. In the next chapter, I explore this idea of disability being in and of the world and posit the important consequences re-imagining disability relationally has for both disabled people and others. Negating neoliberal reproductive futurity is thus not simply a question of “fucking the child,” but, as I will outline in my next chapter, is to heterotopically and intracorporeally invest otherwise in social relations that complicate this horizon.

#### Voting affirmative engages in a heterotopic imagination of disability. This is a method of imagining disability differently outside of the current neoliberal conditions. The product is a figure of disability not as something to overcome but as a life worth living.

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Challenging the undesirability of disability is a shared responsibility and goes beyond the inclusion of disabled people within the exploitative and individualized relations of neoliberal capitalism. That is, challenging the undesirability of disability requires more than individualized access to education, employment, or vibrant social lives. Challenging the undesirability of disability requires that disability be imagined differently, that is, imagined in ways that ensure that disability can be collectively practiced and experienced differently. In order to imagine disability differently, it is imperative to understand how the neoliberal hegemonic social imagination both works to curtail who is considered desirable and informs the production of a good, individualized neoliberal subject that limits disabled and able-bodied people alike. Neoliberal policies and practices individualize both able-bodied and disabled bodies through forms of debility and capacity (Puar 2011) and through the economization of social relations and life itself (Murphy 2013) such that being critical of these forms of social, economic, and political relations is not enough to extricate ourselves from our role in maintaining and reproducing these relations. In order to desire disability differently, we must begin with marginal, heterotopic imaginations whereby disability is practiced as not something to overcome or merely tolerate, but rather as a part of a life worth living. Building on Michel Foucault’s concept of heterotopia (1998), a concept that marks “outside places” by their discontinuity and multiplicity, and drawing on the work of Mel Chen (2012) and Rod Michalko (1999), I argue that the heterotopic imagination reconfigures how disability emerges, with whom it emerges, and where. When disability is viewed through the lens of the heterotopic imagination, it becomes an intracorporeal, non-anthropocentric, multiplicity that exceeds the individualized human body inscribed by neoliberal biocapitalism. To elaborate on disability as this emergent multiplicity, I read Chen’s and Michalko’s work alongside Thomas Lemke’s (2015) work on Foucault’s concepts of the milieu and government of things, as well as the agential realism of feminist materialist Karen Barad (2007; 2008). Desiring disability differently does not merely allow the current formulation of disability to become desirable. On the contrary, desiring disability differently through the heterotopic imagination radically alters what disability is, how it is practiced, and what it can be.

### 2

#### Welcome to the simulacrum of learning, an educational hall of mirrors in which all forms of knowledge are diluted to the point of non-recognition – once a site for the holistic development of the human psyche, education has reduced to a banal and homogenous machine in which all individuals are molded into passive, hyper-rational actors – this tragic process of standardization strips all classrooms of education, students of learning, and teachers of teaching, leaving a rotting carcass of knowledge where the university once stood

Rankin 16. William, explorer in emerging pedagogies and mobile learning activist, 9/11, “*Beyond Modern Education: Simulacra and Simulation,*” <https://unfoldlearning.net/2016/09/11/beyond-modern-education-2/> RECUT CHO

“The real is produced from miniaturized cells, matrices, and memory banks, models of control — and it can be reproduced an indefinite number of times from these. It no longer needs to be rational, because it no longer measures itself against either an ideal or negative instance. It is no longer anything but operational. In fact, it is no longer really the real […]. It is a hyperreal, produced from a radiating synthesis of combinatory models in a hyperspace without atmosphere.” (2) In this phase, the image “has no relation to any reality whatsoever; it is its own pure simulacrum” (6). So to recap, in the first order, things are what they seem because they stay tightly connected to human meaning. In the second order, things pretend to be something they’re not, and they have to pretend because they’re being distanced from human meaning and capability to allow for mechanization and manufacturing. In the third order, things only play at pretending because even mechanization and manufacturing are being displaced by marketing — the fabricated connection to human meaning and capability through a kind of fictional nostalgia. In the fourth order, things are no longer connected to genuine meaning and become only virtual and self-referential, a world of disconnected echoes. Because their origins are purely digital and because the digital is ephemeral, easily changed or erased, they no longer have any significant connection to the real. It’s a pretty bleak picture and one that may be surprising for those of us who are deeply invested in the digital world. But whether you buy Baudrillard’s model or not, this progression offers us an opportunity not only to understand the present condition of our educational system, but also to plot its future trajectory — and to change it if we wish. This article and the next will trace some of the ways Baudrillard’s theories apply, and that will open the door for later installments in this series where we’ll consider how to move beyond where we find education today. For now, let’s consider the parallel series of phases that we can trace through educational history, a “four orders of learning” that roughly matches the time periods and characteristics of Baudrillard’s four orders. Seen through the lens of Baudrillard’s theory, the history of learning looks something like this: 1st-order learning: This model was dominated by a holistic focus centered around human craft. Teaching and learning were practiced in small, highly personalized contexts — the guild, the family, the mentor/disciple relationship. Some schools formed in this period, notably Oxford and Cambridge Universities, still structure much of their teaching and learning around these close, highly interactive relationships. In this stage, teachers worked to guide students by giving them tailored assignments that matched students’ individual capabilities (Quintilian’s [Institutio Oratoria](http://penelope.uchicago.edu/Thayer/E/Roman/Texts/Quintilian/Institutio_Oratoria/home.html) provides an excellent discussion), and students’ progress was measured largely by their ability to make or perform in real-world contexts. Assessment was conducted not only by an individual teacher or guide, but often by a related group or guild — or even by the community at large. However, learning progress had not yet been abstracted into grades or scores, so there was no way to speed up or streamline the educational process since every learner had to be prepared and evaluated individually. Each learner proceeding through this system thus represented the same level of investment on the part of the teacher or guide. Because of this direct correlation between the learners and the symbolic significance their learning represented (the investment of time, work, and expertise), anyone could quickly recognize the “meaning” of their learning. In other words, being “learned” became a kind of sign in which the signifier and the signified were inherently — or even “naturally” — linked. Further, even abstract or philosophical studies were grounded in the real both through observation of the world (consider, for example, Plato’s Symposia or Aristotle’s Rhetoric) and because learners were also expected to translate that learning back into service of the community through their practice of the discipline and through their continued integration as the next generation of guides or teachers. This made for a kind of non-hierarchical equivalency that characterized the period: learners were simply future teachers, and learning was just one stage in a continuous system. The direct connections between learners and teachers and between learning and service (even if that service was for a profit) meant that learning was, in Baudrillardian terms, a “reflection of a profound reality” (6), creating a symbolic understanding of learning we might call “sacramental.” 2nd-order learning: The dawn of early industrial culture not only transformed how we produced goods but also how we “produced” learners, and the focus of learning increasingly became dominated by the factory. Not only did we shift the structure of schools better to match that of the factory (with layers of “management,” regularized hours, etc.) but we also increasingly expected the “products” of education — and even the overall goals of education — to take on the nature of factory productions: reproducible, measurable, standardized, and broken down into easily manageable and discrete pieces. The increasing call for universal education in the 18th and 19th centuries, although deriving from certain high-minded concerns about human potential, were equally focused on producing a functional and docile workforce — a “raw material” that was just as essential as iron, cotton, and wood to early factories. Although education still sought to prepare learners in the fields of study that had developed in the first stage, second-order learning increasingly separated the activities of learning from activities associated with making in real-world contexts. Instead, second-order learning replaced them with repetitive, hermetic tasks focused on building discipline and obedience. Indeed, the crowning representation of this new focus on control, paraded and parodied in countless retellings, was a school-bell system that mirrored the factory’s whistle — chiming out an end to students’ “shifts” of drudging work in precisely the same way their parents were freed from their factories. Although the new model of learning seemingly adopted the overall substance of first-order learning, it thus used that substance for largely opposite purposes: holistic, individualized empowerment was, for most participants, replaced by delimited, standardized systems of control and subjugation. Although certain elite learners were still able to operate according to the old system (access typically being limited based on class or financial capability), the new system of the second phase sought to replace it with something more “rational.” The idiosyncratic, learner-centric model of the old system was seen as an inefficient and anachronistic hold-over, and second-order educators sought to replace it with standardized materials, standardized curricula, and standardized progress that would unlock the efficiencies necessary to establish universal education. In so doing, corners had to be cut, the craft of teaching was increasingly replaced with rationalized and standardized “science,” and the careful attention to individual learning needs had to be abandoned. What had been a communal equivalency between learners and teachers became increasingly stratified and hierachized for most participants. Although many more students could be processed through the new school “factories,” the symbolic meaning of education as a signifier was progressively diluted — a product of increasing standardization, disentanglement from real-world contexts, and the use of education as a system of control. In this second phase, the symbolic significance of learning thus begins to “mask[…] and denature[…] a profound reality” (Baudrillard 6). 3rd-order learning: By this third stage, the notion of universal education — and the system of rationalization and standardization it required — was becoming so dominant and so conventional that it had largely displaced the notion of individualization that once characterized education. Indeed, the embrace of standardized learning and standardized testing transformed the entire educational enterprise. Politicians and educators alike touted the triumph of rationalizing “educational outputs,” fueled in part by the introduction of technologies like the IBM 805 Test Scoring Machine in 1937. In this context, schools proved their worth not primarily by how they engaged students in meaningful enterprises but rather by students’ scores on a range of standardized tests developed and honed over decades. As this period progressed, the pursuit of increasing performance metrics drove a relentless focus on “efficacy,” “efficiency,” and “results.” Coupled with economic and cultural pressures, this move to “industrialize” led to a narrowing of disciplinary offerings and a streamlining of curricula in the disciplines that remained. The focus on “evidence” led to a predictable preference for disciplines dominated by discrete, rational information — science and math — and an increasing marginalization of the “fluffy” disciplines associated with the humanities — music, art, literature, and languages. Disciplines were adapted to accommodate only those characteristics that testing could measure and that administrators and legislators wanted. The world of third-order learning was thus filled with activities whose every characteristic and rationale were already shaped by their ability to prove the value of standardized assessment. What had begun as an effort to serve ever larger numbers of students through a rational system of metrics in the second phase thus became in the third an end in itself. Teachers, students, and schools were evaluated based on their ability to meet standards in an increasingly proscribed way, and economic, social, and legislative efforts enforced compliance. At the same time, the work of schools became even further disconnected from active substantiation in the real world. While a sort of lip-service was still paid to the ways learning would benefit students “after graduation,” the notion of actual application was increasingly marginalized, reserved for “vocational learning.” Such learning of trades was also increasingly discredited, seen as an option only for those who couldn’t make it in “real” school — which, ironically, was increasingly characterized by its divorce from the real. The net effect was a separation of the signifiers of education (grades, degrees, and measurements of performance) from what they had once signified (holistic expertise and application). Isolated from opportunities for engagement in real-world contexts or activities, students were increasingly channeled to embrace a model of “academic achievement” whose primary task involved serving the assessment regimen. This shift is perhaps best epitomized in the increasing focus on test preparation as a dominant part of primary and secondary school curricula. Students, in turn, realizing what was actually at the heart of the system, also began to prefer the signifier over its signified, pursuing the grade (rather than the learning it was meant to certify) as a way of gaming the academic system: “I really need an A in this class so I can get into the college I want” (or “keep my scholarship” or “get that job” or any number of possibilities). Such displacement shows a kind of triumph of “marketing” that almost completely severs the tenuous relationship between reality and signification. In fact, this endless echo-effect became so pervasive that people begin to lose touch with what “real” learning even meant — at least in first-order terms. The closest most people got was the ghost of past academic rituals that still haunted academic proceedings in the form of nostalgia — parades of academic regalia and increasingly hollow references to the “rights, privileges, and responsibilities hereunto appertaining” on diplomas. Those rituals, originally designed to mark participants with the outward signifiers that pointed to an attainment of expertise through the investment of time and work, now became largely boundary marking events. Those outside of the academic system expected to have to train graduates thoroughly in “real work” because the application of skills was almost entirely missing from their educational experience. We might therefore call this third phase “the order of sorcery” because the symbolic accoutrements of learning only “play[ed] at being an appearance” (Baudrillard 6) — seeking to comfort us with a reassuring “reality” that proved itself almost entirely illusory if we peeked behind the curtain. Backed by carefully measured yet largely meaningless piles of standardized data, educational attainment in this third phase therefore covered over the fact that there was little real behind those scores because their chief function was to “mask[…] the absence of a profound reality” (6). 4th-order learning: For many schools (especially in the US), the confluence of standardized testing, “results”-based funding, international competition, the productization of education for business purposes, and political opportunism turned the nature of education on its head in this final phase. In what we might call the “simulacrum” of learning, schools’ dependency on student test scores for survival and funding made students not the beneficiaries but rather the fodder of a hermetic bureaucratic system no longer centrally focused on their holistic preparation. Second- and third-order efforts to assess and guarantee school performance according to standardized outcomes fully metastasized, resulting in a system so disconnected from the real that it was virtually unrecognizable. A few giant multinationals now controlled not only the standardized exams and all of the preparatory materials that supported them, but also entire curricular catalogues, their chief aim being to lock educational entities fully into their resource monopolies, maximizing profit by controlling the entire educational project (consider the case of the Canuttllo school district, near El Paso). Schools, under pressure to meet performance metrics or be punished, not only scrubbed from their rolls “undesirable” students who might bring down test scores, but also “juked the stats,” manipulating performance in ways that sometimes included outright cheating ([Atlanta](http://www.usnews.com/news/articles/2015/04/02/11-former-atlanta-educators-convicted-in-standardized-test-cheating-scandal) and [Houston](http://www.fairtest.org/cheating-scandal-rocks-texas) being just two notable instances). School curricula were perverted to serve particular, narrow political ideologies (consider the recent dustup over Texas’ [treatment of slavery](http://www.nytimes.com/2015/10/22/opinion/how-texas-teaches-history.html?_r=0) or its rewriting of textbooks). In the fun-house hall of mirrors that resulted, there was one glaring absence: concern with increasing capabilities that benefitted learners. Despite a relentless focus on improving test scores, those test results had nothing to do with creativity, innovation, or entrepreneurship as Yong Zhao has recently shown with PISA scores [here](http://zhaolearning.com/2012/06/06/test-scores-vs-entrepreneurship-pisa-timss-and-confidence/) and [here](http://www.studentachievement.org/wp-content/uploads/Innovation-and-creativity.pdf). Educational enterprises are designed to compete with one another, but are utterly divorced from what people once considered reality — that connection to developing human capability and expertise through real-world application. This is the world of the “hyperreal,” a world “produced from [….] models of control [that] no longer needs to be rational, because it no longer measures itself against either an ideal or negative instance. It is no longer anything but operational. In fact, it is no longer really the real […]” ( Baudrillard 2). In this phase, the image “has no relation to any reality whatsoever; it is its own pure simulacrum” (6). Of course, what I’m describing here — like Baudrillard was doing — are overall superstructures, the symbolic frameworks that give shape and meaning to our world and the way we read it. It’s not that good, caring teachers have disappeared in the fourth order, nor have instances of applications of real-world learning to real-world situations (for example, efforts in problem- and challenge-based learning). And this is not to say that students can’t learn and benefit, even if their educational lives are dominated by fourth-order structures. However, the existence of a fourth-order “simulation” means that teachers who want to operate according to a different model must fight an entire symbolic system arrayed against them, and they must invent a new kind of language — a new form of signification — to succeed.

#### It is through this precession of codification that the Code arises as a system of signification – a mode of social organization premised upon the erasure of symbolic exchange in favor of absolute transparency within the socius. Within the code, all difference is decided, reduced to information, and exchanged seamlessly as the very texture of being is eradicated from the body

Pawlett 13. William Pawlett, senior lecturer in media, communications, and cultural studies at the University of Wolverhampton, UK, Violence, Society and Radical Theory : Bataille, Baudrillard and Contemporary Society, pg. 132 RECUT CHO

Baudrillard on Hatred and Difference In recent sociological literature, hatred is understood as the result of an entrenched structure of difference which imposes a normative and hierarchical order on those who appear to be ‘different’. Those who benefit most from established social and economic structures: white, middle-class heterosexual males, exercise and reinforce their position of dominance through a wide range of oppositions with each pair consisting of positive and negative terms. Hence black, female, gay, become the negative terms by which white, male and straight define and maintain their identities as superior. Since such identity positions are not naturally superior they require the maintenance of boundaries separating them ideologically from their opposite term. Identity and difference are mutually reinforcing and difference tends to be reduced to a subordinate, supplementary or supporting role. Further, such accounts assert, in times of stress, loss of status (such as loss of employment, or difficulty in securing meaningful employment) those in a privileged position will vent their frustrations on those who are ‘different’ (Perry 2001). More recently, sociological accounts have stressed the importance of the emotional bonds which link the hater with whomever or whatever they hate (Alford 1998; Scheff and Retzinger 2001). The hater is thereby revealed to be in a situation of weakness and dependence which tends to further enrage them. Many writers then enjoin a celebration of ‘difference’ or ‘diversity’ such that difference can be either revealed as really rather similar to identity – as in many multiculturalist arguments – or alternatively ‘difference’ is celebrated as ‘different’ but not lesser. In both of these accounts there is usually some appeal for greater education or information on ‘cultural difference’ and better or more positive media representations of ‘difference’. This section examines how the ideas of Bataille and Baudrillard depart from these trends. Hatred, for Bataille, is a powerful, enduring though derivative and mobile psychological attitude. Hatred is not an affect or drive, but a restricted, accumulated rag-bag of sentiments. Such sentiments parallel capitalist values in that they consist of ideological and representational claims which are extremely reductive, in particular, they reduce human being to the state of a productive instrument, and further in their accumulative form and refusal of generosity and reciprocity. For Baudrillard, hatred is a far more supple relation than the term ‘bond’ suggests; it is so readily channelled, re-directed, switched or substituted. In the destructured, implosive and limitless system that dominates contemporary life the hater does not necessarily even require an object or ‘other’ to hate, or an identity position to protect or affirm. In his re-thinking of hate Baudrillard asks, provocatively, is it some version of difference or otherness that suffers the rage of haters, or is it rather those who are perceived and positioned as “dangerously similar” (1993b: 129). The category of the “dangerously similar” includes those who have been forcibly deprived of their difference by the globalising of simulatory Western values. For Baudrillard, we are all haters, not because of some innate ‘badness’ of human nature, but because we live in a system that encourages hate and thrives upon its channelling. Both Bataille and Baudrillard then take hatred very seriously, aiming to theorise it in its intensity and power and avoiding facile social prescriptions concerning social progress through better representation or education. The Code and its Discriminations In For a Critique of the Political Economy of the Sign (1981, orig. 1972) Baudrillard began to describe various codes of meaning (or signification) as integrated by what he called ‘the code’ ( le code, la grille, le Code du signes, la matrice ). By “the code” Baudrillard intended not particular codes of meaning (English, French, Morse) or particular modes of the interpretation of meaning (dominant, resistant, plural) but rather the condition of possibility of coding . 2 For an effective critique of the consumer society to be made, Baudrillard suggests, we must focus analysis on the form of the Code, not its contents or representations which are, of course, extraordinarily open, malleable and diverse. The Code as form is preconscious, or, in Baudrillard’s terminology, has the effect of “precession”; that is, as grid or network it precedes individual experience, perception and choice. The medium of this grid is the abstract, arbitrary sign. Signs, visual and linguistic, are the medium of coding, of the ordered exchange between coded elements. Composed to two sets of inter-locking relations, the sign-referent and signifier-signified, the sign is the universal form constructing the oppositions of subject and object, of real and representation, of self and other: the building blocks of ‘reality’ itself. The ordered exchange of signs produces identity and difference: every ‘thing’ is semiotic; every ‘thing’ is a ‘thing’ because it is not some other ‘thing’. Signs produce social meanings and values on a scale or grid whereby all points can be measured and compared. To clarify, it is not that every ‘thing’ can be converted into sign form, it is rather that the very process of transcription or coding produces ‘things’ within a scheme of identities and differences. Though the Code encompasses every ‘thing’ it cannot process symbolic exchange, seduction, the ambivalence (or becoming) of life which consist not ‘things’ with identity but of volatile relations, always “in transit” or metamorphosis. The Code then does not merely express particular aspects of the consumer capitalist system such as media, fashion or advertising: it is far more fundamental. At the fundamental level the Code is what prevents symbolic exchange by breaking its cycles or by seizing and diverting its potential. Symbolic exchange now occurs or rather “effracts” only when the Code and its value systems are annulled, reversed or suspended. Symbolic exchange traverses all oppositions, challenging fixed or stable positions or power relations. Baudrillard’s major example of symbolic exchange is, of course, the gift and counter-gift discussed in Chapter 2. To reiterate, the meaning of the gift never settles into fixity or identity, it is not structured by a logic of difference, its meaning can be transformed at any moment in the on-going relation or “pact” between parties – indeed this relation is of the gift and the gift is of this relation: relation and gift flourish together, and die together. Baudrillard defines the Code as a “generalised metaphysics” synthesising social values, social production and social identities, and this system ends any sense of the social as dynamic, symbolic form. The Code enacts an “obligatory registration of individuals on the scale of status” (1981: 68), producing a “hierarchy of differential signs” which, crucially, “constitutes the fundamental, decisive form of social control – more so than acquiescence to ideological norms” (ibid.). It makes no difference whether we, as individuals, endorse the consumer capitalist system or not, since we are all positioned by the Code, and are positioned through it by others: the game of ideological critique takes place within the terms set by the Code. The Code breaks, blocks and bars ambivalence producing the structure of difference – the play of identity and difference characterised by oppositions such as true/false, good/evil, self/other, black/white, male/female. The standard dimensions of consumer status positioning flow from this source: rich/poor, young/ old, fat/thin, attractive/unattractive. While structural or dialectical oppositions are characteristic of the first and second orders of simulacra, in the third order the Code simulates choice, difference and diversity through binary “modulation” by allowing the privileged terms of its oppositions to switch, fuse or “implode” (1983: 95-110). For example ‘fat’, ‘poor’ and ‘old’ can be beautiful too – if only within the confines of fashion, cosmetics advertising or pop music video. The Code operates in “total indifference” to content; everything is permitted in sign form; that is as “simulation”. The Code also performs a pacifying effect on society: the once clear-cut, structural divisions such as class and status are made less visible by registering all people as individual consumers on a single, universal scale. Everyone becomes a consumer, though some, of course, consume far more than others. As universal form the status of consumer confers a kind of democratic flattening of social relations, but an illusory one. If class conflict was, to some extent, pacified, Baudrillard does not contend that society as a whole is pacified; indeed other forms of violence and dissent emerge and cannot be deterred. Baudrillard wrote of the emergence of new “anomalous” forms of violence, less intelligible, less structured, post-dialectical or implosive (Baudrillard 1998a: 174-85; 1994: 71-2)). He refers to the Watts riots of 1965 as an example of new violent rejections of the consumer system. Later, Baudrillard proposed the term “disembodied hate” or simply “the hate” to express aspects of this process (1996a: 142-7). The Code then is a principle of integration producing everything and everyone as a position on the scale of social value . With the last vestiges of symbolic orders around the world being eliminated by neo-liberal economic globalisation how is the Code to be challenged or defied? 3 Departing from the form but not the intent of Marxist theory, Baudrillard argued that the apparent distinction between use value and economic exchange value is produced as a “code effect”. In other words, use value is a simulatory form produced by the capitalist system as justification and grounding for its trading of economic exchange values (1981: 130-42). For Baudrillard the illusion of use value, like the illusion of signified meanings and the illusion of the stable solid reality of the referent, are produced by the Code as structural groundings, shoring up the unstable ‘reality’ of signs and preventing the emergence of ambivalence (1981: 156 n.9). To challenge, defy or breach the Code then it is not sufficient to ‘return’ to use value. Indeed such strategies, shared by some Marxists, environmentalists and anti-globalisation movements actually feed the capitalist system: the market’s semiotic assimilation of environmentalism as the ‘green’ brand choice is an obvious example. But if Marxist theory fails to engage with and challenge the system of signs, so too, for Baudrillard, do many Structuralist, Poststructuralist and Postmodernist theorists of desire, difference and liberation. To defy the system it is never sufficient to ‘play with signs’, that is, to play with plural, ‘different’ or multiple identity positions. Here we encounter Baudrillard’s total rejection of what would later be called ‘identity politics’ and also a central misunderstanding of his position on signs. 4 For Baudrillard to play with signs – signs of consumption and status, signs of gender, sexuality or ethnicity is simply to operate within the Code . It is an unconscious or unwitting complicity with the Code’s logic of the multiplication of status positions; it is, in a sense, to assist it in the production of ‘diversity’ and ‘choice’. It is deeply ironic that some of Baudrillard’s critics have claimed that Baudrillard himself merely ‘played with signs’ and that he advocated a playing with signs. Yet Baudrillard is clear, in order to oppose the system “[e]ven signs must burn” (1981: 163). In his controversial work Seduction (orig. 1979) Baudrillard draws an important distinction between the “ludique” meaning playing the game of signs, playing with signification (to enhance one’s status position or to assert one’s identity through its ‘difference’), and “mise enjeux” meaning to put signs at stake, to challenging them or annul them through symbolic exchange (1990: 15778). 5 For Baudrillard signs play with us, despite us, against us; any radical defiance must be a defiance of signs and their codings. Unfortunately, the distinction between ‘playing with signs’ – playing with their decoding and recoding, and defying the sign system has not penetrated the mainstream of Media and Cultural Studies. Eco’s influential notion of “semiotic guerrilla warfare” (Eco 1995) and Hall’s even more influential notion of “resistant decoding” place their faith in the ability of the sovereign, rational consumer to negotiate mediated meanings. For them the citizen-consumer confronts media content as the subject confronts the object. Hall does not consider that much media content is now ‘pre-encoded’ in an ersatz ‘oppositional’ form which renders the moment of ‘oppositional decoding’ merely one of conformity or ironic recognition (see Hall et al. 2002: 128-38). In other words, the terms for ‘resistant’ readings can be pre-set as positions within the Code. Critique is rendered uncertain, even meaningless by coded assimilation because the system sells us the signs of opposition as willingly as it sells us the signs of conformity; it sells signs of inclusion and empowerment as eagerly as it sells signs of affluence and exclusion. Can we even tell them apart? In which category would we place the phenomenon of Sex and the City , for example? 6 Today, millions of people manage, archive and share signs of their designated identity through social media platforms, in Baudrillard’s terms holding themselves hostage to the system of signs. The realm of symbolic exchange or seduction does not come about when individuals ‘play with signs’ but when (signs of) individuality, identity, will and agency are annulled through an encounter with radical otherness. Radical otherness, or radical alterity, for Baudrillard, refers to otherness not ‘difference’, that is otherness beyond representation, beyond coding – including ‘oppositional’ or assertive de/re-codings. A system of “total constraint” the Code does not merely produce identity but also difference, diversity and hybridity: indeed each of these now describe marketing strategies. Of course, the system does not seek to promote passivity or apathy among consumers but quite the contrary: to thrive and expand the system requires active, discriminating, engaged consumers, jostling for position, competing for advancement. The Code exists “to better prime the aspiration towards the higher level” (1981: 60), delivering diversity and choice at the level of signs or content (the goods that we choose to eat, the products and services that we choose to wear, watch, download) and it requires in return … nothing much at all – merely that we understand ourselves as consumers . The aim of the system is to make ‘the consumer’ the universal form of humanity yet within this form an almost infinite variety of differential contents or positions are possible; homogenisation and diversification become indistinguishable. Since ‘humanity’, for Baudrillard, as for Nietzsche, is already constituted as a universal form by the Enlightenment (1993a: 50) this task is close to completion, though the final completion, the “perfect crime” against Otherness will never, according to Baudrillard, come to pass (Baudrillard 1996a). 7 As a term the Code largely disappeared from Baudrillard’s writings after Simulacra and Simulation (1994). Are we to take it that the Code is still operational in the “fourth order” or is it defunct? We can answer this question by recalling two important points. Firstly, Baudrillard did not contend that the pacification and control effected by the Code would be total (quite the reverse, see Baudrillard 1996a: 142-9; 1998a: 174-85), only that the Code aimed at total constraint. Baudrillard’s most developed example, the masses, let us recall, are not so passive and docile that they are manipulated by the system; rather, they withdraw into silence or practice a hyper-conformity without belief in, or commitment to, the integrated system of values. In other words, they refuse to be the active, discriminating, reflective consumers that the system requires. Baudrillard writes “We form a mass, living most of the time in panic or haphazardly ( aleatoire ) above and beyond any meaning” (1983: 15), the masses are clearly not only the poor and marginal, they are “us, you and everyone” ( nous, vous, tout le monde ) (1983: 46; 2005b: 51). This ‘we’ is not a rhetorical device used to assert a faux value consensus; rather it suggests a buried, banished commonality, a commonality of nothing except a shared rejection of systemic control. Everyone, as posited by the Code, is mass ; both inside and, at the same time, beyond the Code: mass, yet singularity. Secondly, in the late 1980s when Baudrillard proposed a fourth order, a fractal stage with “no point of reference”, where “value radiates in all directions” as a “haphazard proliferation” (Baudrillard 1993b: 11) he was clear that the previous orders continue to function alongside the fourth order. In other words, there are still dialectical tensions operating, associated with the second order, and the Code of the third order also flourishes. Indeed what is most distinctive about the fourth order is that: things continue to function long after their ideas have disappeared, and they do so in total indifference to their content. The paradoxical fact is that they function even better under these circumstances (Baudrillard 1993b: 6). The idea or principle of the Code then is dead, but it functions even more effectively than ever, it becomes virtual, it produces “integral reality” as the complete and final replacement for the world as symbolic form (Baudrillard 2005a: 17-24). The Code, simulation and virtuality become so dominant, so global, that overt forms of resistance or counter-systemic violence are absorbed within it. Countersystemic violence might be given a (safe) place to play out through the media and entertainment industries, or it might be neutralised by the system offering a simulated, commodified version of what protesters and dissenters demand – this was how the sexual revolution was neutralised, according to Baudrillard. However, new forms of violence emerge from within saturated, controlling and dissuasive systems, intra-genic forms which, Baudrillard suggests, seem to be “secreted” by the system itself as it reaches a bloated, excessive or “hypertelic” state. “The hate” is one example of such intra-genic violence. Racism, Indifference and “the Hate” The whole art of politics today is to whip up popular indifference (Baudrillard, Cool Memories II , 1996b: 16) What then is the relationship between the Code and violence and hatred? The Code both pacifies and produces hate; indeed it produces hatred through pacification. While consumer capitalism has, to some extent, achieved a pacifying effect on ‘structural’ hatred such as the racism of skin colour, the system generates new hatreds and new violence that cannot be ‘treated’ by socialisation, education and information. On racism specifically Baudrillard argues: Logically, it [racism] should have declined with the advance of Enlightenment and democracy. Yet the more hybrid our cultures become, and the more the theoretical and genetic bases of racism crumble away, the stronger it grows. But this is because we are dealing here with a mental object, with an artificial construction based on an erosion of the singularity of cultures and entry into the fetishistic system of difference. So long as there is otherness, strangeness and the (possibly violent) dual relation – as we see in anthropological accounts up to the eighteenth century and into the colonial period – there was no racism properly so-called … all forms of sexist, racist, ethnic or cultural discrimination arise out of the same profound disaffection and out of a collective mourning for a dead otherness, set against a background of general indifference (Baudrillard 199a6: 132). If the systemic violence of difference is ameliorated, at least in the world of signs and in what people are prepared to state openly, the post-dialectical violence of indifference seems to grow in intensity. The violence of in-difference or “the hate” is like an antibiotic resistant virus, a hospital ‘superbug’: it cannot be treated by the standard measures because the over-use of those very measures helped to produced it (Baudrillard 1996a: 142-7; 2005a: 141-55). The Code’s vast edifice of signs – “the fetishistic system of difference” – diversifies and assimilates producing ‘positive’ representations at the same time as the divide, both economic and cultural, between rich and poor deepens and ramifies. The edifice of signs actually “deters”, prevents or displaces the possibility of genuine social progress by delivering “simulated” social progress: signs of equality, signs of inclusion, signs of empowerment. Baudrillard’s contends that this “indifferent” society is based on the expulsion of all forms of “radical otherness”: foreignness, death, madness, negativity, ‘evil’, even the radical otherness of language is dismantled by linguistics and informationalisation. Such societies are, broadly, ‘tolerant’ but this means simply that there is a widespread indifference to the other. So long as the other conforms to the agenda set by liberal capitalism – a life reduced to usefulness, productivity, and distinctive regimes of consumption – that is, so long as the other remains fundamentally the same , the other is tolerated. Difference is tolerated so long as it remains within the identity/difference binary opposition, difference being plotted from the standards of sameness and identity. In a sense, difference and indifference become indistinguishable: minorities are tolerated in their difference when they can offer certain superficial differences within the consumer system: different food, different music, different clothes, different ‘culture’. Indeed ‘culture’ is increasingly understood as the inessential markings of certain groups: it is commonplace to hear talk of club culture, organisational culture, gay culture and these generally refer to nothing more than the current styles of speech, aesthetic preferences and consumption practices of these groups. The society of indifference generates a new and insidious form of racism. The “indifferent society” is not one where ‘anything goes’ or where there are no systemic exclusions, quite the reverse: “the whole movement of an indifferent society ends in victimhood and hatred” (Baudrillard 1996a: 131). What he calls the “negative passion of indifference” involves a “hysterical and speculative resurrection of the other” (1996: 131). This artificial other is “idealised by hatred”, by condescension or pity – the other becomes fetish. Racism is desperately seeking the other in the form of evil to be combated. The humanitarian seeks the other just as desperately in the form of victims to aid … [.] The scapegoat is no longer the person you hound, but the one whose lot you lament. But he is still a scapegoat and he is still the same person (Baudrillard 1996: 132). Hatred is secreted by the modern, liberal, indifferent reconstruction of the Other as other. This “negotiable other” is promoted, even celebrated but only through a compulsory registration on a single scale of identity/difference, a scale by which the other is assimilated, measured and judged. Indeed, for Baudrillard, this compulsory registration constitutes “a subtler form of extermination” that structural racism (1993b: 133). The other – the lower case, similar, yet marginally different other – is scapegoated by humanitarianism in search of an object of pity, by politicians seeking opportunities for televised performances of contrition, by the media seeking sensational and calamitous tales. But this is not simply misjudged charity, well-meaning but ineffective, the fetishising of the other serves a deeper purpose. Western power brokers urgently require an injection of reality, of real reality to shore up their public relations campaigns, their regimes of simulation, and the other as victim can be made to provide precisely this. Western politicians and corporations seek to “import their force and the energy of their misfortune” (Baudrillard 1996a: 134). The disastrous other of the ‘third world’ provides useful cover for the operation of neo-liberal and neo-conservative economic, cultural and military policies which maintain the third world in its disastrous, but to them, usefully disastrous condition. “The hate”, as Baudrillard figures it, cannot be broken down and understood through the structural or binary oppositions of self and other, black and white, inside and outside. The hate does not emanate from a recognisable position: a self, an ideology, a discourse or a culture, nor does it emerge from the ideology or culture of the other. The verb ‘to hate’, like the self or ego has been liberated and become autonomous: uprooted it flows and seeps crossing any boundary, any limit (Baudrillard 2005c: 141). The hate is networked, it travels at the speed of information, it has not one object or target but all and any; because it is not, primarily, hatred of something or someone, it is not reflective or critical nor does it propose alternatives. Having no definite object, goal or purpose, no programme or ideology, the hate is a particularly intractable and corrosive form of hatred. If these ideas appear rather formalistic or abstract, it is surprisingly easy to generate illustrative examples. If we take the violent protests by some Muslim groups, provoked by the Danish newspaper Jyllands-Posten publishing cartoons of the prophet Mohammed in 2005, what precisely was the object of the protesters’ hate? It was not a particular newspaper, it was not the Danish state or people, it was, perhaps, not even ‘The West’ as such, it was the dominance of a system of representation that recognises no outside, no sacred, no ‘beyond’, that reduces all meanings, beliefs and sensations to signs. 9 To give other examples: the middle classes hate and fear the ‘hoodie’ or the baseball-capped ‘chav’; the BNP (British National Party) hate ‘Muslims’ though, increasingly, they ‘tolerate’ Hindus and Sikhs; motorists and air passengers suddenly experience “the hate”. These hates do not follow the limits of self and other, inside and outside, they are far more mobile and tactical; they flare up and then vanish or mutate before reappearing without warning. Yet, what Baudrillard’s position suggests is that we (in the sense noted above) do not hate the Other – the radically Other, we merely hate the other – as transcribed through the Code as ‘difference’. Thus trascribed an individual person is merely a conglomeration of signs which fabricate their ‘reality’ their ‘culture’ – and if this is what we are reduced to, why wouldn’t we hate each other? The Code then reduces the radically Other to the “dangerously similar”: dangerously similar because others differ only in sign content or position (Baudrillard 1993b: 129). In our superficial acceptance of the Code we hate (and we do all hate) the other as sign , as merely a signified ‘reality’. We encounter an other who is no more than the ‘reality’ of their signification; at best we are indifferent to the other and tolerate them. Indeed, we cannot but be indifferent to the other because it is through indifference that we tolerate.

#### Modern academia is grounded in the drive toward rationality contingent on the total transparency of the self and outside world, feeding the global fantasy of efficient communication and subject formation contingent on the complete eradication of radical alterity. This nature demands instead a fatal strategy, a conceptual suicide that pushes the logic of the system to the point of systemic implosion

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But far from an ‘a-disciplinary self-constitution’ that supposedly overcomes any fictitious distinction, Investigacció for one relies heavily on the common fictitious distinction between activism and academia to validate their praxis. By contrasting their initiative to the false objectivity of academicism, they validate their own knowledge production by claiming to be in the margins as opposed to the ‘ivory tower’, as if the latter is a stable area from which one can detach oneself from the outside world and hence objectively analyse. Also, one could wonder to what extent one is actually speaking from the margins when one has the time, technologies, spaces and connections to organise an event like Investigacció. The desire to generate knowledge from ‘one’s own subjectivity, without limitations’ (2005: 3) is analogous to the mythical humanist narrative of breaking with and improving upon previous knowledge – a form of knowledge-innovation that the academic institution is also infused with. The university of excellence as well as its doublings into projects like Investigacció are therefore an effect of its repetitions (with a difference) into the neo-liberal mythical space of progress and acceleration. The creation of more and more ‘spaces and mechanisms of production, exchange and collective reflection’ (2005: 3) is indeed precisely what late-capitalism seeks to forge, as long as such reflection generates an intensification of production. The idea that subjectivities from social movements are in any way less produced by neo-liberal globalisation is highly problematic. In fact, such an idea suggests a rather positivist notion of the subject – similar to that supposedly objective academic individual Investigacció seeks to dethrone. Investigacció then somewhat nostalgically narrates a subject untainted by power structures and technologies. In fact, the Investigaccióinitiative displays how the subject of activist research empowers her- or himself throughrecreating the fictitious distinction between activism and academia. S/he does so by reproducing this opposition, which in turn co-creates and accelerates these ‘new spaces’ – spaces that were created with the goal of facilitating global capitalism and its speed-elite, and that allow for the perfection of military power through technologies of surveillance. The call for participants to become active and productive in co-organising the international event – of course, without any monetary remuneration – is also much present in Investigacció’s rhetoric. They suggest that participants should engage with one another not only at the meeting, but especially through the online spaces Investigacció has created for the purpose of generating activist research. ‘Take action!’ says their flyer, ‘[...] make it so the conference is yours!’ This seductive appeal to the subject-individual as the centre of creative production is very common to neo-liberal consumerism and its emphasis on cybernetic interactivity. But it is also false in that it gives the participants a sense of control over Investigacció that they actually do not have – eventually, the main organisers (have already) set the agenda and handed out the stakes. In short, the organisers fail to situate themselves by pretending everyone is on the same level of privilege – for example, not requiring monetary compensation – in this project, and this failure is strangely an effect of their attempt at reviving a more democratic academic structure. Information Initially, one could think that Baudrillard’s assessment confirms my analytical suspicion regarding activist-research projects. In ‘The Implosion’, Baudrillard starts from the premise that the increase of information in our media-saturated society results in a loss of meaning because it ‘exhausts itself in the act of staging communication’. New media technologies exacerbate the subject’s fantasy of transparent communication, while increasingly what are communicated are mere copies of the same, a ‘recycling in the negative of the traditional institution’ (Baudrillard, 1994: 80). New technologies are simply the materialisation of that fantasy of communication, and the ‘lure’ (1994: 81) of such a technocratic system resides in the requirement of active political engagement to uphold that fantasy. This translates in a call to subjectivise oneself – to be vocal, participate, and to ‘play the [...] liberating claim of subjecthood’ (1994: 85). The result of the intensifying circular logic of this system, he says, is that meaning not only implodes in the media, but also that the social implodes in the masses – the construction of a ‘hyperreal’ (1994: 81). Contra the claim of Glocal Research Space that such praxes of alliance are ‘without an object’ (Glocal Research Space, 2003: 19), this does not mean that objectification does not take place at all. Instead, and in line with Baudrillard’s argument, the urge to subjectivise oneself and the objectification of the individual go hand in hand under speed-elitism – a double bind that locks the individual firmly into her or his technocratic conditions. Indeed, the argument in ‘Activist Research’ that ‘research [should be] like an effective procedure [which is] in itself already a result’ (2003: 19) describes the conditions of Readings’ ‘university of excellence’ where any research activity, thanks to technological instantaneity, translates immediately into the capitalist result of increased information flow (Readings, 1996: 22). Active subjects and their others become the cybernetic objects of such a system of information flow. The insistence in ‘Activist Research’ on free, travelling and nomadic research simply makes sure that this logic of increased flow is repeated. Because of this desire for increased flow and connection, activist-research projects are paradoxically highly exclusivist in advocating the discourses and tools of the speed-elite. The problem with projects like Edu-Factory or the productive cross-over of activism and academia is therefore not only that their political counter-information means just more information (and loss of meaning) as well as more capitalist production, but that it puts its faith in precisely those technologies and fantasies of control, communication and of ‘being political’ that underlie the current logic of overproduction. It is at this point that John Armitage and Joanne Roberts in ‘Chronotopia’ contend that such a ‘cyclical repetition’ (Armitage and Roberts, 2002: 52) is particularly dangerous because the fantasy of control remains exactly that, a fantasy. At the same time, this increasingly forceful repetition can only eventually give way to ‘the accident’ because chronotopian speed-spaces are fundamentally and exponentially unstable. Armitage and Roberts’ idea of ‘cyclical repetition’ through chronotopianism does thus not mean an exact repetition of the speed-elite’s quest for mastery – instead, I would argue that it is this immanent quality of difference in repetition, of the ‘essential drifting due to [a technology’s] iterative structure cut off from […] consciousness as the authority of the last analysis’ as Derrida calls it in ‘Signature Event Context’ (Derrida, 1982: 316) that allows for the accident or true event to appear. The difference through technologically sped-up repetition appears then perhaps as a potential, but only precisely as a growing potential that cannot be willed – in this sense, it will be an unanticipated event indeed. One could then speak of an intensification of politics in what is perhaps too hastily called the neo-liberal university, opening up unexpected spaces for critique in the face of its neo-liberalisation, which in turn points to the fundamental instability of its enterprise. Activist-research projects add to this intensification by virtue of their techno-acceleration. This intensification of politics is no ground for univocal celebration, since it remains also the hallmark of the neo-liberal mode of production of knowledge through the new tele-technologies as excellent, regardless of its critical content. The current university’s instability mirrors and aggravates the volatility of a capitalism marked by non-sustainability, a growing feminisation of poverty, the rise of a new global upper class, and highly mediated illusions of cybernetic mastery. This nonetheless also opens up new forms of thought, if only appearing as ‘accidents’. Derrida hints at this, but also at the university’s elusiveness, in ‘Mochlos, or: the Conflict of the Faculties’, when he claims that he ‘would almost call [the university] the child of an inseparable couple, metaphysics and technology’ (Derrida, 1993: 5, emphasis mine). Almost, but never quite – here then emerges the possibility of truly subversive change. But this change will not be brought about by the mere content of the critique, but by the way it pushes acceleration to the point of systemic disintegration or implosion. In Fatal Strategies, Baudrillard calls this the ‘fatal strategy’ that contemporary theory must adopt: a sort of conceptual suicide attack which aims at pulling the rug out from under the speed-elitist mobilisation of semiotic oppositions, and which shows the paradox behind any attempt at structural predictions. In ‘The Final Solution’, Baudrillard relates this intensification of the humanist obsession with dialectics, mastery, and transparency – the quest for immortality that is at the basis of techno-scientific research – to destruction and the death drive through the metaphor of and actual research around cloning, which strangely resonates well with Derrida’s investigation of the tele-technological archive in Archive Fever. I read Baudrillard’s ‘Final Solution’ here as a metaphor for the duplication (cloning) of thought into virtual spaces outside the university walls proper. If contemporary research seeks to make human cloning possible, argues Baudrillard, then this endeavour is equivalent to cancer: after all, cancer is simply automatic cloning, a deadly form of multiplication. It is of interest here to note that the possibility of creating an army of clones has likewise garnered much military interest, just as academia today more and more serves military ends. As the logic of cloning as automatic multiplication is typical of all current technological and humanist advancements, the exacerbation of this logic can only mean more promise and death. At this point my argument mirrors the apocalyptic tone of the activist-research projects. In the final analysis, the problem with Edu-Factory, Facoltà di Fuga, Investigacció, Universidad Nómada, Ricercatori Precari, and Glocal Research Space is that these projects entail a very specific form of subjugation with dire consequences for the slower and less techno-genic classes. Techno-scientific progress entails a regress into immortality, epitomised by a nostalgia typical of the current socio-technical situation, for when we were ‘undivided’ (Baudrillard, 2000: 6). I contend that Baudrillard refers not only to the lifeless stage before humans became sexed life forms, but also makes an allusion to psycho-analytic readings of the ‘subject divided in language’ and its nostalgia for wholeness and transparent communication. The desire for immortality, like archive fever, is therefore the same as the Freudian death drive, and we ourselves ultimately become the object of our technologies of scrutiny and nostalgia. The humanist quest of totally transparency of oneself and of the world to oneself that grounds the idea of the modern techno-scientific university, is ultimately an attempt at (self-)destruction, or in any case an attempted destruction of (one’s) radical difference [alterity]. The urgent political question, which Stiegler problematically avoided in Disorientation, then becomes: which selves are and will become caught up in the delusion of total self-transparency and self-justification, and which selves will be destroyed? And how may we conceive of an ‘ethic of intellectual inquiry or aesthetic contemplation’ that ‘resists the imperatives of speed’, as Jon Cook likewise wonders in ‘The Techno-University and the Future of Knowledge’ (Cook, 1999: 323)? It is of particular importance to note here that the very inception of this question and its possible analysis, like the conception of the speed-elite, is itself again a performative repetition of the grounding myth of the university of independent truth, justice and reason. Therefore, in carrying forward the humanist promise, this analysis is itself bound up in the intensification of the logic of acceleration and destruction, and that is then also equally tenuous. This complicity of thought in the violence of acceleration itself in turn quickens the machine of the humanist promise, and can only manifest itself in the prediction of a coming apocalypse – whether it concerns a narrative of the death of thought and the university, or of a technological acceleration engendering the Freudian death drive. We are then simply the next target in the technological realisation of complete γνωθι σαυτον (know thyself) – or so it seems. Because after all, a clone is never an exact copy, as Baudrillard very well knows; and therefore, the extent to which activist-research projects hopefully invite alterity can thankfully not yet be thought.

#### The role of debaters is to engage in hyperconformity – the only option is a radical mimicry of the forms of the system, accelerating them to the point of their obvious vacuity, proving the limit point of the system is paradoxically its own elimination. We affirm this strategy of duality and reversibility in a moment of semiotic rupture, maintaining the possibility of mystery and radical alterity

Pawlett 14. William Pawlett, senior lecturer in media, communications, and cultural studies at the University of Wolverhampton, UK, “Society At War With Itself,” International Journal of Baudrillard Studies, Volume 11, Number 2 (May, 2014) Recut CHO

It all depends on the ground we choose to fight on … most often … we choose to fight on ground where we are beaten before we begin (Baudrillard 2001: 119). This paper examines Baudrillard’s assertion, made in later works includingImpossible Exchange (2001), The Intelligence of Evil (2005) and Pyres of Autumn(2006), that individuals, society and indeed the global system, are internally and irreconcilably divided, that modernity is ‘at odds with itself’ (Baudrillard 2006: 1). In his view dissent, rejection and insurrection emerge from within, not from external challenges such as alternative ideologies or competing worldviews, but from within bodies, within borders, inside programmes. For Baudrillard much of the violence, hatred and discomfort visible around the globe can be understood as a latent but fundamental ‘silent insurrection’ against the global integrating system and its many pressures, demands and humiliations (2001: 106). This is anendogenic or intra-genic rejection, it emanates from within the system, from within individuals, even from within language, electronic systems and bodily cells, erupting as abreaction, metastasis and sudden reversal.[2](http://www2.ubishops.ca/baudrillardstudies/vol-11_2/v11-2-pawlett.html#ft-endnote2) For Baudrillard then, despite the many simulations of external threat and enmity – radical Islam currently being the best example – the most dangerous threat lies within: ‘society faces a far harder test than any external threA2: that of its own absence, its loss of reality’ (2006: 1). The global order, conventionally labelled “capitalist”, is neutralising its values and structures, its ideologies disappear, its principles are sacrificed. Even the sense of “reality” produced by the abstract sign and by simulation models begin to disappear (2005: 67-73; 2009: 10-15). The goal is ‘integral reality’, a limitless operational project geared towards the total transcription of the world into virtuality: ‘everything is realised and technically materialised without reference to any principle or final purpose’ (2005: 18). Yet there is an internal war or “backlash” taking place between integralist violence which seeks ultimate control by eliminating all otherness, and duality. Duality, for Baudrillard, is “indestructible” and is manifest as the inevitable or destined re-emergence of otherness: of death, Evil, ambivalence, the ghosts of symbolic exchange, the accursed share within the system. The integrating system then suffers a ‘dissent working away at it from inside. It is the global violence immanent in the world-system itself which, from within, sets the purest form of symbolic challenge against it’ (2005: 22). This is a war or conflict that does not end, the outcome of which cannot be predicted or programmed. It is a war that is quite different from the disappearance of war into simulated non-events, such as occurred with the Gulf wars (Baudrillard 1995). Indeed, Baudrillard suggests, the deterrence of world wars, and of nuclear wars, does not result in peace, but in a viral proliferation of conflicts, a fractalisation of war and conflict into everyday, local, and ubiquitous terror (1993b: 27). This paper will examine Baudrillard’s position on internal rejection through two closely related themes: complicity and duality. Complicity, and the closely related term collusion, are themselves dual in Baudrillard’s sense. That is, complicity or collusion express an internal division or ‘duality’ which is not a simple opposition of terms. As is so often the case, Baudrillard’s position builds on his much earlier studies: Requiem For the Media (orig. 1972, in Baudrillard 1981: 164-184) had already argued that the dominance of the abstract sign and of simulation models meant that any critique of the system made through the channels of semiotic abstraction were automatically re-absorbed into the system. Any meaningful challenge must invent its own, alternative medium – such as the silk-screen printings, hand-painted notices and graffiti of May 1968 – or it will lapse into an ineffectual complicity with the system it seeks to challenge (Baudrillard 1981: 176). In his later work, Baudrillard’s emphasis on duality and complicity is extended much further, taking on global, anthropological and even cosmological dimensions, and increasingly complicity and collusion are seen as dual, as encompassing both acceptance and a subtle defiance. This paper examines the dual nature of complicity and collusion. It considers the influence of La Boetie’s notorious Essay on Voluntary Servitude on Baudrillard, seeking to draw out what is distinctive in Baudrillard’s position. The second section turns to the notion of duality, examining Good and Evil and Baudrillard’s assertion that attempts to eliminate duality merely revive or re-active it. Complicity implies a complexity of relations, and, specifically, the condition of being an accomplice to those in power. To be an accomplice is to assist in the committing of a crime. If the crime is murder, the term accomplice implies one who plans, reflects, calculates – but does not strike the lethal blow. The crime which is of particular interest to Baudrillard is, of course, the perfect crime: the elimination of otherness, of ambivalence, of duality, even of “reality” and of the abstract representational sign which enables a sense of “reality” (Baudrillard 1996). The global, integral, carnivalising and cannibalising system, which might loosely still be called capitalist, is at war against radical otherness or duality; yet, for Baudrillard, as duality lies at its heart, locked within its foundations, it is indestructible and emerges through attempts to eliminate it. If the system has been largely successful at eliminating external threats, it finds itself in an even worse situation: it is at war with itself. II. Complicity Complicity is a particularly slippery term. In the 1980s Baudrillard’s thought, mistakenly assumed to be “Postmodernist”, was argued to be complicit with capitalism, largely because it questioned the ability of dominant strands of Marxism and feminism to significantly challenge the capitalist system (Callinicos 1989; Norris 1992). At the same time, Baudrillard was alleging that the work of supposedly radical theorists such as Deleuze and Guattari (1984 orig. 1972) and Lyotard (1993 orig. 1974) was, with their emphasis on desire as productive and liberatory force, complicit with the mechanisms of advanced consumer capitalism (Baudrillard 1987: 17-20). So which branch of contemporary theory is most complicit with capitalism? Liberals, humanists and environmentalists who see their clothes stolen by mainstream politicians? Marxists and Communists who by refusing to update their thinking provide a slow moving target for right-wing snipers? Post- Modernists and Post-Structuralists who attack Enlightenment thought but refuse to speak of the human subject and so have “thrown the baby out with the bath water”? Network and complexity theory which flattens all phenomena and experience to a position on a grid, producing a very complex simplification? The list could go on but it is a question that cannot be answered because all critical theories are complicit with the system they critique. They fight on a terrain already demarcated by their opponents, a terrain on which they are beaten before they begin, one where the most compelling argument can always be dismissed as doom-mongering or irresponsible intellectualism. This includes Baudrillard’s own critical thinking, as he readily acknowledges (Baudrillard 2009a: 39). Further, and even more damaging to the project of critique, in a hegemonic or integral order the system solicits critique and it criticises itself, so displacing and making redundant the laborious attempts at academic critique. The latter continue, even proliferate, but with decreasing impact. So, what does Baudrillard mean by complicity with the global order? Baudrillard’s concern is primarily with complicity at the level of the form of the (capitalist) system, not at the level of belief, consent or allegiance to particular contents of capitalist life (consumer products, plurality of ‘lifestyles’, a degree of ‘tolerance’ etc.). Complicity is often seen, by critics of capitalism, as acceptance of consumerism and its myriad choices and lifestyles, but this is a reductive level of analysis from Baudrillard’s perspective. By complicity or collusion Baudrillard means, on the one hand, the very widespread willingness to surrender or give up beliefs, passions and “symbolic defences” (2010: 24), and on the other – as the dual form – an equally widespread ability to find a space of defiance through the play of complicity, collusion, hyperconformity and indifference (1983: 41-8). That is, while many of us (in the relatively affluent West) share in the profanating, denigrating and “carnivalising” of all values, embracing indifference, shrugging “whatever”, we do so with very little commitment to the system, rejoicing inwardly when it suffers reversals: we operate in a dual mode. While such attitudes of indifference may seem to accept that there is no meaningful alternative to capitalism: an attitude that has been called ‘capitalist nihilism’ (Davis in Milbank and Zizek, 2009) and ‘capitalist realism’ (Fisher 2008), Baudrillard’s notions of “integral reality”, duality and complicity may have significant advantages over those approaches. Unlike thinkers who remain anchored to critical thinking defined by determinate negation, Baudrillard’s approach emphasises ambivalence, reversal and both personal and collective modes of rejection more subtle than those envisioned by the increasingly exhausted mechanisms of critique. The critique of consumer capitalism – the consumption of junk food, junk entertainment and junk information – is now integral to the system; the critique of finance capitalism – banker’s bonuses, corporate tax avoidance – is integral to the system, yet it fails to bring about meaningful or determinate social transformation. Indeed, such critiques may do no more than provide the system with a fleeting sense of “reality” – real issues, real problems to deal with – around which the system can reproduce its simulacra, perhaps to reassure us that “something is being done”, “measures are being put into place” etc. “Reality” cannot be dialectically negated by critical concepts when both ‘reality’ and the critical concept disappear together, their fates clearly tied to each other (Baudrillard 2009b: 10-12). There is a sense then in which the production of critique is in complicity with the system, the unravel-able proliferation and excess of critical accounts of the system has the effect of protecting the system. Complicity consists in a sharing of the denigration of all values, all institutions, all ideas, all beliefs: so long as we believe in nothing – at least not passionately – then the system has us, at least superficially. For example, in recent decades we have seen the denigration of religious faiths – or their reduction to ‘cultural identity’ and ‘world heritage’ objects; the denigration of public services and welfare provision accompanied by their marketisation; the denigration of the poor, the young, immigrants and the unemployed. Yet this is not only the denigration of the powerless or disenfranchised, there is also the widespread denigration of those seen as powerful: politicians, corporations, celebrities. For Baudrillard, it is quite inadequate to focus only on the power of global neo-liberal policies such as marketisation in these processes of denigration. This is where Baudrillard’s position departs decisively from anti-globalists and from neo-Communists such as Negri, Zizek, and Badiou. Global power has deliberately sacrificed its values and ideologies, it presents no position, it takes no stand, it undermines even the illusion that “free markets” function and has made “capital” virtual; become orbital it is removed from a terrestrial, geo-political or subjective space. These are protective measures enabling power to become (almost) hegemonic (Baudrillard 2009a: 33-56; 2010: 35-40). Baudrillard often emphasises the fragility and the vulnerability to reversal of the “powerful” and the distinction between powerful and powerless is radically questioned in his work. So what is this global power? Where is it? The answer, of course, is that it is everywhere and it is in everyone. We have not liberated ourselves from slavery, but, Baudrillard contends, internalised the masters: ‘[e]verthing changes with the emancipation of the slave and the internalisation of the master by the emancipated slave’ (2009a: 33). We tyrannise ourselves, for example by demanding that we maximise our opportunities, fulfill our potential. This is a deeper level of slavery – and complicity – than any previous historical system could inflict (Baudrillard 1975; 2009a: 33). Yet duality always re-emerges, Baudrillard insists: indifference is dual, complicity is dual. Carnivalisation and cannibalisation are themselves dual: the global system absorbs all otherness in a ‘forced conversion to modernity’ (2010: 5), reproducing otherness within the carnival of marketable “difference”, yet cannibalisation emerges as a reversion and derailing of this process. The world adopts Western models: economic, cultural, religious – or it appears to. Hidden within this complicity with the West, there is, Baudrillard suggests, a deeper sense of derision and rejection. The allegiance to Western models is superficial; it is a form of mimicry or hyperconformity that involves a ritual-like exorcism of the hegemonic system. Further, such mimicry reveals the superficiality of Western cultural and economic models: this is not only a superficial acceptance, but an acceptance of superficiality. Western values are already parodic, and, in being accepted, they are subject to further parody as they circulate around the globe (2010: 4-11). The West has deregulated and devalued itself and demands that the rest of the world follows: "It is everything by which a human being retains some value in his own eyes that we (the West) are deliberately sacrificing … [o]ur truth is always to be sought in unveiling, de-sublimation, reductive analysis …[n]othing is true if it is not desacralised, objectivised, shorn of its aura, dragged on to the stage" (Baudrillard 2010: 23). Western desacrilisation amounts to a powerful challenge to the rest of the world, a potlatch: desacralise in return or perish! But who has the power? Who is the victor? There isn’t one, according to Baudrillard. Of the global order, Baudrillard writes: ‘We are its hostages – victims and accomplices at one and the same time – immersed in the same global monopoly of the networks. A monopoly which, moreover – and this is the supreme ruse of hegemony – no one holds any longer’ (2010: 40). There is no Master, no sovereign because all the structures and dictates of power have been internalised, this is the complicity we all share with global order, yet it is a dual complicity: an over-eager acceptance goes hand-in-hand with a deep and growing rejection. Baudrillard’s discussions of power, servitude and complicity make frequent reference to Estienne La Boetie’s essay on voluntary servitude, completed around 1554. The fundamental political question for La Boetie is: ‘how can it happen that a vast number of individuals, of towns, cities and nations can allow one man to tyrannise them, a man who has no power except the power they themselves give him, who could do them no harm were they not willing to suffer harm’ (La Boetie 1988: 38). It seems people do not want to be free, do not want to wield power or determine their own fates: ‘it is the people who enslave themselves’ (La Boetie 1988: 41). People in general are the accomplices of the powerful and the tyrannical, some profit directly through wealth, property, favour – ‘the little tyrants beneath the principal one’ (1988: 64), but many do not, why do they not rebel? Baudrillard takes up La Boetie’s emphasis on servitude being enforced and maintained from within, rather than from without. Yet, there are also major divergences. La Boetie deplores the “common people” for accepting the narcotising pleasures of drinking, gambling and sexual promiscuity, while Baudrillard rejects such elitism and celebrates the masses abilities to strategically defy those who would manipulate them through perverse but lethally effective practices such as silence, radical indifference, hyperconformity – dual modes of complicity and rejection (Baudrillard 1983: 1-61). Though La Boetie’s essay prefigures the development of the concept of hegemony, he never doubts that voluntary servitude is unnatural, a product of malign custom that is in contradiction with the true nature of human beings which is to enjoy a God-given freedom. Baudrillard, by contrast, examines voluntary servitude as a strategy of the refusal of power, a refusal of the snares of self and identity, as strategy of freedom from the tyranny of the will and the fiction of self-determination (Baudrillard 2001: 51-7). For Baudrillard the “declination” or refusal of will disarms those who seek to exert power through influencing or guiding peoples’ choices and feelings towards particular ends. It also allows for a symbolic space, a space of vital distance or removal, a space in which to act, or even act-out (of) a character (Baudrillard 2001: 72-3). This is a space where radical otherness may be encountered, a sense of shared destiny which is a manifestation of the dual form at the level of individual existence (Baudrillard 2001: 79). It could certainly be argued that modern subjects are confronted by a far more subtle and pervasive system of control than were the subjects discussed in La Boetie’s analysis. In theorising the nature of modern controls Baudrillard develops suggestive themes from La Boetie’s work. Speaking of slavery in the Assyrian empire, where, apparently, kings would not appear in public, La Boetie argues, ‘the fact that they did not know who their master was, and hardly knew whether they had one at all, made them all the more willing to be slaves’ (1988: 60). Whatever its historical provenance, this strategy of power is, it seems, generalised in modernity; particularly after the shift away from Fordist mass production it has become increasingly hard to detect who the masters actually are. While workers are persecuted by middle managers, supervisors, team leaders, project co-ordinators who are the masters of this universe? Who are the true beneficiaries? Rather than trying to identify a global neo-liberal elite, as do many proponents of anti-capitalist theory, Baudrillard suggests that the situation we confront is so grave because “we” (those in the West in relatively privileged positions) have usurped the position of masters; we have become the slave masters of ourselves, tyrannising every detail of our own lives: trying to work harder, trying for promotion or simply trying to avoid redundancy. We are all the accomplices of a trans-capitalist, trans-economic exploitation. We are all tyrants: a billion tiny tyrants servicing a system of elimination. But this is not to say that Baudrillard ignores power differentials altogether: ‘it is, indeed, those who submit themselves most mercilessly to their own decisions who fill the greater part of the authoritarian ranks, alleging sacrifice on their parts to impose even greater sacrifices on others’ (2001: 60-1). We all impose such violence on ourselves and on others as part of our daily routines, hence Baudrillard’s injunction to refuse power: ‘Power itself must be abolished – and not solely because of a refusal to be dominated, which is at the heart of all traditional struggles – but also, just as violently, in the refusal to dominate’ (2009a: 47). Yet, even on the theme of systemic violence and elimination, Baudrillard differs sharply from neo-communist theory, while retaining a position of defiance. Systemic eliminationism should not be conceived in individual or subjective terms, despite good points made in recent studies of work and education under neo-liberalism, such as Cederström and Fleming’s Dead Man Working (2012). At a formal level, neo-liberal eliminationism does not merely eliminate jobs and also lives (for example in the recent textile factory fires in Bangladesh), it eliminates meaning, symbolic space and thought. And it eliminates not by termination but by “ex-termination”. That is, by transcribing the world into integral reality, the system produces a single, meaning-depleted, virtual space which encourages participation, engagement and campaigning, on condition that these are produced as part and parcel of an integrated void where “[t]he real no longer has any force as sign, and signs no longer have any force of meaning” (Baudrillard 2001: 4). Most of the developed world has been conferred the right to blog and to tweet as they please and they are indebted to the system in a way which far exceeds the paying of a small tribute or rent to Microsoft or Apple (Zizek 2010: 233). The symbolic debt imposed by the modern world and its technologies is of a metaphysical or cosmological order. Through it we take leave of this world Baudrillard suggests, we become extra-terrestrials. We will recognise no Other, no singularity, no debt to anyone because we attempt to cancel everything out in an integral, technological system that has no outsides because it was, in a sense, created from the outside.

#### Evaluate the aff as a response to the call of the topic as an act of mystery – by passionately playing the game, we can effectively parody the System.

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The game comes from nowhere – “radical alterity” – idea of being something not of the system. Rules are always parodies and exaggerations of reality – it’s a way to engage in a non-system. Their acceleration comes form an overloading of meaning – to be absurd. What is more absurd than the game of debate. The game is a challenge and the dark sphere inhabited by its players involves a strong passion for rules (Baudrillard, 1979). Baudrillard (1979) understands the gamer to exist in a kind of hyperfreedom where the arbitrariness of the program is exchanged for society and the law. The game is perhaps the most poetic way we have yet discovered to "rid ourselves," he says, "of social conceptions of freedom" (Baudrillard, 2005b, p. 55). The spirit of gaming extends, for Baudrillard, back to well before the arrival of the virtual and technological gamer of today. We have long been avid devotees of games -- of a kind of rules-bound uncertainty and unpredictability we enjoy in our simulated absence from society while engaged in any game (Baudrillard, 1990). For Baudrillard (2001), the rules of the game "seem to come from some other sphere, with nothing to justify them -- just like chance, that eternal unjustified principle" (p. 90). Ambivalence reappears here as he considers that our submission to chance in the game is, at the same time, a way of parodying the ethics of work, value and economy (Baudrillard, 1979). The game contains the passion of illusion and appearances, and who is more passionate today than the gamer? (Baudrillard, 1990) For Baudrillard (2005a), "the fundamental passion is that of the game" (p. 149). This passion, in our transpolitical era, is replacing political passions from earlier times. Today, Baudrillard (1993a) says, even "hope bringing movements" (green or feminist) become part of the promotional machine of American and Western culture (p. 152). The cool passion of the game, an important aspect of its cool ambivalence, works to replace the former hot passions of politics or the body. When we play a game, we are impassioned, says Baudrillard, by the stakes -- not necessarily a positive or negative passion but a passion just the same -- the "passion of battle," he calls it (Baudrillard, 2005a, p. 149). We play the game, we make progress through its network, we lose, and we lose again; eventually we may even win -- it is the passion of this experience. In the place of liberty in today's society, Baudrillard (1979) finds instead the game and reminds us that our very passion for games and rules parodies all ideologies of liberty.

### 3

#### Appropriation causes debris

Scoles 15 [(Sarah Scoles, freelance science writer, contributor at Wired and Popular Science, author of the books Making Contact and They Are Already Here) “Dust from asteroid mining spells danger for satellites,” New Scientist, May 27, 2015, <https://www.newscientist.com/article/mg22630235-100-dust-from-asteroid-mining-spells-danger-for-satellites/>] TDI

* Study this is citing – Javier Roa, Space Dynamic Group, Applied Physics Department, Technical University of Madrid. Casey J Handmer, Theoretical Astrophysics, California Institute of Technology. Both PhD Candidates. “Quantifying hazards: asteroid disruption in lunar distant retrograde orbits,” arXiv, Cornell University, May 14, 2015, <https://arxiv.org/pdf/1505.03800.pdf>

NASA chose the second option for its [Asteroid Redirect Mission](http://www.nasa.gov/content/what-is-nasa-s-asteroid-redirect-mission/), which aims to [pluck a boulder from an asteroid’s surface](https://www.newscientist.com/article/dn27243-rock-grab-from-asteroid-will-aid-human-mission-to-mars) and relocate it to a stable orbit around the moon. But an asteroid’s gravity is so weak that it’s not hard for surface particles to escape into space. Now a new model warns that debris shed by such transplanted rocks could intrude where many defence and communication satellites live – in geosynchronous orbit.

According to [Casey Handmer](http://www.caseyhandmer.com/) of the California Institute of Technology in Pasadena and Javier Roa of the Technical University of Madrid in Spain, 5 per cent of the escaped debris will end up in regions traversed by satellites. Over 10 years, it would cross geosynchronous orbit 63 times on average. A satellite in the wrong spot at the wrong time will suffer a damaging high-speed collision with that dust.

The study also looks at the “catastrophic disruption” of an asteroid 5 metres across or bigger. Its total break-up into a pile of rubble would increase the risk to satellites by more than 30 per cent ([arxiv.org/abs/1505.03800](http://arxiv.org/abs/1505.03800)).

#### Debris harms satellites

Intagliata 17 [(Christopher Intagliata, MA Journalism from NYU, Editor for NPRs All Things Considered, Reporter/Host for Scientific American’s 60 Second Science) “The Sneaky Danger of Space Dust,” Scientific American, May 11, 2017, <https://www.scientificamerican.com/podcast/episode/the-sneaky-danger-of-space-dust/>] TDI

When tiny particles of space debris slam into satellites, the collision could cause the emission of hardware-frying radiation, Christopher Intagliata reports.

Aside from all the satellites, and the space station orbiting the Earth, there's a lot of trash circling the planet, too. Twenty-one thousand [baseball-sized chunks](https://www.scientificamerican.com/article/orbital-debris-space-fence/) of debris, [according to NASA](https://www.orbitaldebris.jsc.nasa.gov/faq.html). But that number's dwarfed by the number of small particles. There's hundreds of millions of those.

"And those smaller particles tend to be going fast. Think of picking up a grain of sand at the beach, and that would be on the large side. But they're going 60 kilometers per second."

Sigrid Close, an applied physicist and astronautical engineer at Stanford University. Close says that whereas mechanical damage—like punctures—is the worry with the bigger chunks, the dust-sized stuff might leave more insidious, invisible marks on satellites—by causing electrical damage.

"We also think this phenomenon can be attributed to some of the failures and anomalies we see on orbit, that right now are basically tagged as 'unknown cause.'"

Close and her colleague Alex Fletcher modeled this phenomenon mathematically, based on plasma physics behavior. And here's what they think happens. First, the dust slams into the spacecraft. Incredibly fast. It vaporizes and ionizes a bit of the ship—and itself. Which generates a cloud of ions and electrons, traveling at different speeds. And then: "It's like a spring action, the electrons are pulled back to the ions, ions are being pushed ahead a little bit. And then the electrons overshoot the ions, so they oscillate, and then they go back out again.”

That movement of electrons creates a pulse of electromagnetic radiation, which Close says could be the culprit for some of that electrical damage to satellites. The study is in the journal Physics of Plasmas. [Alex C. Fletcher and Sigrid Close, [Particle-in-cell simulations of an RF emission mechanism associated with hypervelocity impact plasmas](http://aip.scitation.org/doi/full/10.1063/1.4980833)]

#### That means warming

Alonso 18 [(Elisa Jiménez Alonso, communications consultant with Acclimatise, climate resilience organization) “Earth Observation of Increasing Importance for Climate Change Adaptation,” Acclimatise, May 2, 2018, <https://www.acclimatise.uk.com/2018/05/02/earth-observation-of-increasing-importance-for-climate-change-adaptation/>] TDI

Earth observation (EO) satellites are playing an increasingly important role in assessing climate change. By providing a constant and consistent stream of data about the state of the climate, EO is not just improving scientific outcomes but can also inform climate policy.

Managing climate-related risks effectively requires accurate, robust, sustained, and wide-ranging climate information. Reliable observational climate data can help scientists test the accuracy of their models and improve the science of attributing certain events to climate change. Information based on projections from models and historic data can help decision makers plan and implement adaptation actions.

Providing information in data-sparse regions

Ground-based weather and climate monitoring systems only cover about 30% of the Earth’s surface. In many parts of the world such data is incomplete and patchy due to poorly maintained weather stations and a general lack of such facilities.

EO satellites and rapidly improving satellite technology, especially data from open access programmes, offer a valuable source information for such data-sparse regions. This is especially important since countries and regions with a lack of climate data are often particularly vulnerable to climate change impacts.

International efforts for systematic observation

The importance of satellite-based observations is also recognised by the international community. Following the recommendations of the World Meteorological Organization’s (WMO) Global Climate Observing System (GCOS) programme, the UNFCCC strongly encourages countries that support space agencies with EO programmes to get involved in GCOS and support the programme’s implementation. The Paris Agreement highlights the need for and importance of effective and progressive responses to the threat of climate change based on the best available scientific knowledge. This implies that climate knowledge needs to be strengthened, which includes continuously improving systematic observations of the Earth’s climate.

To meet the need of such systematic climate observations, GCOS developed the concept of the Essential Climate Variable, or ECV. According to WMO, an ECV “is a physical, chemical or biological variable or a group of linked variables that critically contributes to the characterization of Earth’ s climate.” In 2010, 50 ECVs which would help the work of the UNFCCC and IPCC were defined by GCOS. The ECVs, which can be seen below, were identified due to their relevance for characterising the climate system and its changes, the technical feasibility of observing or deriving them on a global scale, and their cost effectiveness.

The 50 Essential Climate Variables as defined by GCOS.

One effort supporting the systemic observation of the climate is the European Space Agency’s (ESA) Climate Change Initiative (CCI). The programme taps into its own and its member countries’ EO archives that have been established in the last three decades in order to provide a timely and adequate contribution to the ECV databases required by the UNFCCC.

Robust evidence supporting climate risk management

Earth observation satellites can observe the entire Earth on a daily basis (polar orbiting satellites) or continuously monitor the disk of Earth below them (geostationary satellites) maintaining a constant watch of the entire globe. Sensors can target any point on Earth even the most remote and inhospitable areas which helps monitor deforestation in vast tropical forests and the melting of the ice caps.

Without insights offered by EO satellites there would not be enough evidence for decision makers to base their climate policies on, increasing the risk of maladaptation. Robust EO data is an invaluable resource for collecting climate information that can inform climate risk management and make it more effective.

#### Extinction

Klein 14[(Naomi Klein, award-winning journalist, syndicated columnist, former Miliband Fellow at the London School of Economics, member of the board of directors of 350.org), *This Changes Everything: Capitalism vs. the Climate*, pp. 12-14]

In a 2012 report, the World Bank laid out the gamble implied by that target. “As global warming approaches and exceeds 2-degrees Celsius, there is a risk of triggering nonlinear tipping elements. Examples include the disintegration of the West Antarctic ice sheet leading to more rapid sea-level rise, or large-scale Amazon dieback drastically affecting ecosystems, rivers, agriculture, energy production, and livelihoods. This would further add to 21st-century global warming and impact entire continents.” In other words, once we allow temperatures to climb past a certain point, where the mercury stops is not in our control.¶ But the bigger problem—and the reason Copenhagen caused such great despair—is that because governments did not agree to binding targets, they are free to pretty much ignore their commitments. Which is precisely what is happening. Indeed, emissions are rising so rapidly that unless something radical changes within our economic structure, 2 degrees now looks like a utopian dream. And it’s not just environmentalists who are raising the alarm. The World Bank also warned when it released its report that “we’re on track to a 4-C warmer world [by century’s end] marked by extreme heat waves, declining global food stocks, loss of ecosystems and biodiversity, and life-threatening sea level rise.” And the report cautioned that, “there is also no certainty that adaptation to a 4-C world is possible.” Kevin Anderson, former director (now deputy director) of the Tyndall Centre for Climate Change, which has quickly established itself as one of the U.K’s premier climate research institutions, is even blunter; he says 4 degrees Celsius warming—7.2 degrees Fahrenheit—is “incompatible with an organized, equitable, and civilized global community.”¶ We don’t know exactly what a 4 degree Celsius world would look like, but even the best-case scenario is likely to be calamitous. Four degrees of warming could raise global sea levels by 1 or possibly even 2 meters by 2100 (and would lock in at least a few additional meters over future centuries). This would drown some island nations such as the Maldives and Tuvalu, and inundate many coastal areas from Ecuador and Brazil to the Netherlands to much of California and the northeastern United States as well as huge swaths of South and Southeast Asia. Major cities likely in jeopardy include Boston, New York, greater Los Angeles, Vancouver, London, Mumbai, Hong Kong, and Shanghai.¶ Meanwhile, brutal heat waves that can kill tens of thousands of people, even in wealthy countries, would become entirely unremarkable summer events on every continent but Antarctica. The heat would also cause staple crops to suffer dramatic yield losses across the globe (it is possible that Indian wheat and U.S. could plummet by as much as 60 percent), this at a time when demand will be surging due to population growth and a growing demand for meat. And since crops will be facing not just heat stress but also extreme events such as wide-ranging droughts, flooding, or pest outbreaks, the losses could easily turn out to be more severe than the models have predicted. When you add ruinous hurricanes, raging wildfires, fisheries collapses, widespread disruptions to water supplies, extinctions, and globe-trotting diseases to the mix, it indeed becomes difficult to imagine that a peaceful, ordered society could be sustained (that is, where such a thing exists in the first place).¶ And keep in mind that these are the optimistic scenarios in which warming is more or less stabilized at 4 degrees Celsius and does not trigger tipping points beyond which runaway warming would occur. Based on the latest modeling, it is becoming safer to assume that 4 degrees could bring about a number of extremely dangerous feedback loops—an Arctic that is regularly ice-free in September, for instance, or, according to one recent study, global vegetation that is too saturated to act as a reliable “sink”, leading to more carbon being emitted rather than stored. Once this happens, any hope of predicting impacts pretty much goes out the window. And this process may be starting sooner than anyone predicted. In May 2014, NASA and the University of California, Irvine scientists revealed that glacier melt in a section of West Antarctica roughly the size of France now “appears unstoppable.” This likely spells down for the entire West Antarctic ice sheet, which according to lead study author Eric Rignot “comes with a sea level rise between three and five metres. Such an event will displace millions of people worldwide.” The disintegration, however, could unfold over centuries and there is still time for emission reductions to slow down the process and prevent the worst. ¶ Much more frightening than any of this is the fact that plenty of mainstream analysts think that on our current emissions trajectory, we are headed for even more than 4 degrees of warming. In 2011, the usually staid International Energy Agency (IEA) issued a report predicting that we are actually on track for 6 degrees Celsius—10.8 degrees Fahrenheit—of warming. And as the IEA’s chief economist put it: “Everybody, even the school children, knows that this will have catastrophic implications for all of us.” (The evidence indicates that 6 degrees of warming is likely to set in motion several major tipping points—not only slower ones such as the aforementioned breakdown of the West Antarctic ice sheet, but possibly more abrupt ones, like massive releases of methane from Arctic permafrost.) The accounting giant PricewaterhouseCoopers as also published a report warning businesses that we are headed for “4-C , or even 6-C” of warming.¶ These various projections are the equivalent of every alarm in your house going off simultaneously. And then every alarm on your street going off as well, one by one by one. They mean, quite simply, that climate change has become an existential crisis for the human species. The only historical precedent for a crisis of this depth and scale was the Cold War fear that we were headed toward nuclear holocaust, which would have made much of the planet uninhabitable. But that was (and remains) a threat; a slim possibility, should geopolitics spiral out of control. The vast majority of nuclear scientists never told us that we were almost certainly going to put our civilization in peril if we kept going about our daily lives as usual, doing exactly what we were already going, which is what climate scientists have been telling us for years. ¶ As the Ohio State University climatologist Lonnie G. Thompson, a world-renowned specialist on glacier melt, explained in 2010, “Climatologists, like other scientists, tend to be a stolid group. We are not given to theatrical rantings about falling skies. Most of us are far more comfortable in our laboratories or gathering data in the field than we are giving interviews to journalists or speaking before Congressional committees. When then are climatologists speaking out about the dangers of global warming? The answer is that virtually all of us are now convinced that global warming poses a clear and present danger to civilization.”

### 4

#### Currently, the Chinese space industry is set to surpass the US space industry

Patel in 2021 [(Neel, space reporter for MIT Technology Review, and I also write The Airlock newsletter, your number one source for everything happening off this planet. Before joining, he worked as a freelance science and technology journalist, contributing stories to Popular Science, The Daily Beast, Slate, Wired, the Verge, and elsewhere. Prior to that, he was an associate editor for Inverse, where I grew and led the website’s space coverage.) “China’s surging private space industry is out to challenge the US” MIT Technology Review, 1/21/2021. https://www.technologyreview.com/2021/01/21/1016513/china-private-commercial-space-industry-dominance/] BC

How did China get here—and why?

Until recently, China’s space activity has been overwhelmingly dominated by two state-owned enterprises: the China Aerospace Science & Industry Corporation Limited (CASIC) and the China Aerospace Science and Technology Corporation (CASC). A few private space firms have been allowed to operate in the country for a while: for example, there’s the China Great Wall Industry Corporation Limited (in reality a subsidiary of CASC), which has provided commercial launches since it was established in 1980. But for the most part, China’s commercial space industry has been nonexistent. Satellites were expensive to build and launch, and they were too heavy and large for anything but the biggest rockets to actually deliver to orbit. The costs involved were too much for anything but national budgets to handle.

That all changed this past decade as the costs of making satellites and launching rockets plunged. In 2014, a year after Xi Jinping took over as the new leader of China, the Chinese government decided to treat civil space development as a key area of innovation, as it had already begun doing with AI and solar power. It issued a policy directive called Document 60 that year to enable large private investment in companies interested in participating in the space industry.

“Xi’s goal was that if China has to become a critical player in technology, including in civil space and aerospace, it was critical to develop a space ecosystem that includes the private sector,” says Namrata Goswami, a geopolitics expert based in Montgomery, Alabama, who’s been studying China’s space program for many years. “He was taking a cue from the American private sector to encourage innovation from a talent pool that extended beyond state-funded organizations.”

As a result, there are now 78 commercial space companies operating in China, according to a 2019 report by the Institute for Defense Analyses. More than half have been founded since 2014, and the vast majority focus on satellite manufacturing and launch services.

For example, Galactic Energy, founded in February 2018, is building its Ceres rocket to offer rapid launch service for single payloads, while its Pallas rocket is being built to deploy entire constellations. Rival company i-Space, formed in 2016, became the first commercial Chinese company to make it to space with its Hyperbola-1 in July 2019. It wants to pursue reusable first-stage boosters that can land vertically, like those from SpaceX. So does LinkSpace (founded in 2014), although it also hopes to use rockets to deliver packages from one terrestrial location to another.

Spacety, founded in 2016, wants to turn around customer orders to build and launch its small satellites in just six months. In December it launched a miniaturized version of a satellite that uses 2D radar images to build 3D reconstructions of terrestrial landscapes. Weeks later, it released the first images taken by the satellite, Hisea-1, featuring three-meter resolution. Spacety wants to launch a constellation of these satellites to offer high-quality imaging at low cost.

To a large extent, China is following the same blueprint drawn up by the US: using government contracts and subsidies to give these companies a foot up. US firms like SpaceX benefited greatly from NASA contracts that paid out millions to build and test rockets and space vehicles for delivering cargo to the International Space Station. With that experience under its belt, SpaceX was able to attract more customers with greater confidence.

Venture capital is another tried-and-true route. The IDA report estimates that VC funding for Chinese space companies was up to $516 million in 2018—far shy of the $2.2 billion American companies raised, but nothing to scoff at for an industry that really only began seven years ago. At least 42 companies had no known government funding.

And much of the government support these companies do receive doesn’t have a federal origin, but a provincial one. “[These companies] are drawing high-tech development to these local communities,” says Hines. “And in return, they’re given more autonomy by the local government.” While most have headquarters in Beijing, many keep facilities in Shenzhen, Chongqing, and other areas that might draw talent from local universities.

There’s also one advantage specific to China: manufacturing. “What is the best country to trust for manufacturing needs?” asks James Zheng, the CEO of Spacety’s Luxembourg headquarters. “It’s China. It’s the manufacturing center of the world.” Zheng believes the country is in a better position than any other to take advantage of the space industry’s new need for mass production of satellites and rockets alike.

A thriving private space industry is crucial in order for government sponsored operations in space to be economically feasible   
Patel 21 [(Neel, space reporter for MIT Technology Review, and I also write The Airlock newsletter, your number one source for everything happening off this planet. Before joining, he worked as a freelance science and technology journalist, contributing stories to Popular Science, The Daily Beast, Slate, Wired, the Verge, and elsewhere. Prior to that, he was an associate editor for Inverse, where I grew and led the website’s space coverage.) “China’s surging private space industry is out to challenge the US” MIT Technology Review, 1/21/2021. https://www.technologyreview.com/2021/01/21/1016513/china-private-commercial-space-industry-dominance/] BC

At first glance, the Ceres-1 launch might seem unremarkable. Ceres-1, however, wasn’t built and launched by China’s national program. It was a commercial rocket—only the second from a Chinese company ever to go into space. And the launch happened less than three years after the company was founded. The achievement is a milestone for China’s fledgling—but rapidly growing—private space industry, an increasingly critical part of the country’s quest to dethrone the US as the world’s preeminent space power.

The rivalry between the US and China, whose space program has surged over the last two decades, is what most people mean when they refer to the 21st-century's space race. China is set to build a new space station later this year and will likely attempt to send its taikonauts to the moon before the decade ends. But these big-picture projects represent just one aspect of the country’s space ambitions. Increasingly, the focus is now on the commercial space industry as well. The nation's growing private space business is less focused on bringing prestige and glory to the nation and more concerned with reducing the cost of spaceflight, increasing its international influence—and making money.

“The state is really great at large, ambitious projects like going to the moon or developing a large reconnaissance satellite,” says Lincoln Hines, a Cornell University researcher who focuses on Chinese foreign policy. “But it’s not responsive to meeting market needs”—one big way to encourage rapid technological growth and innovation. “I think the government thinks its commercial space sector can be complementary to the state,” he says.

What are the market needs that Hines is referring to? Satellites, and rockets that can launch them into orbit. The space industry is undergoing a renaissance thanks to two big trends spurred by the commercial industry: we can make satellites for less money by making them smaller and using off-the-shelf hardware; and we can also make rockets for less money, by using less costly materials or reusing boosters after they’ve already flown (which SpaceX pioneered with its Falcon 9). These trends mean it is now cheaper to send stuff into space, and the services and data that satellites can offer have come down in price accordingly.

China has seen an opportunity. A 2017 report by Bank of America Merrill Lynch estimates that the space industry could be worth up to $2.7 trillion by 2030. Setting foot on the moon and establishing a lunar colony might be a statement of national power, but securing a share of such a highly lucrative business is perhaps even more important to the country’s future.

“In the future, there will be tens of thousands of satellites waiting to launch, which is a major opportunity for Galactic Energy” says Wu Yue, a company spokesperson.

The problem is, China has to make up decades’ worth of ground lost to the West.

#### If the Chinese space industry surpasses the U.S. space industry, they will proliferate extremely dangerous Anti-Satellite Weapons – only the affirmative can prevent this – China has a history of foregoing international commitments

Rajagopalan on May 12th [(Dr Rajeswari (Raji) Pillai Rajagopalan is the Director of the Centre for Security, Strategy and Technology (CSST) at the Observer Research Foundation, New Delhi. Dr Rajagopalan was the Technical Advisor to the United Nations Group of Governmental Experts (GGE) on Prevention of Arms Race in Outer Space (PAROS) (July 2018-July 2019). She was also a Non-Resident Indo-Pacific Fellow at the Perth USAsia Centre from April-December 2020. As a senior Asia defence writer for The Diplomat, she writes a weekly column on Asian strategic issues. Dr Rajagopalan joined ORF after a five-year stint at the National Security Council Secretariat (2003-2007), Government of India, where she was an Assistant Director. Prior to joining the NSCS, she was Research Officer at the Institute of Defence Studies and Analyses, New Delhi. She was also a Visiting Professor at the Graduate Institute of International Politics, National Chung Hsing University, Taiwan in 2012. Dr Rajagopalan has authored or edited nine books including Global Nuclear Security: Moving Beyond the NSS (2018), Space Policy 2.0 (2017), Nuclear Security in India (2015), Clashing Titans: Military Strategy and Insecurity among Asian Great Powers (2012), The Dragon's Fire: Chinese Military Strategy and Its Implications for Asia (2009). She has published research essays in edited volumes, and in peer reviewed journals such as India Review, Strategic Studies Quarterly, Air and Space Power Journal, International Journal of Nuclear Law and Strategic Analysis. She has also contributed essays to newspapers such as The Washington Post, The Wall Street Journal, Times of India, and The Economic Times. She has been invited to speak at international fora including the United Nations Disarmament Forum (New York), the UN Committee on the Peaceful Uses of Outer Space (COPUOS) (Vienna), Conference on Disarmament (Geneva), ASEAN Regional Forum (ARF) and the European Union.) “China’s irresponsible behaviour: A threat to space security” Observer Research Foundation, 5/12/2021. https://www.orfonline.org/expert-speak/chinas-irresponsible-behaviour-a-threat-to-space-security/] BC

With China planning an ambitious space programme that includes its own space station, it is likely that there will be more such risky incidents in the future as well. It is somewhat disturbing because China’s space programme has advanced to a degree that it undertakes missions including landing on the South Pole-Aitken Basin (on the far side of the Moon), returning rocks from the moon, and an interplanetary mission to Mars, which clearly demonstrates China has the technical capability to design and launch rockets whose spent stages can land without putting others at risk. That it has not done so is odd. It is not exactly what can be characterised as responsible behaviour in space.

Another example of China breaking norms and engaging in irresponsible behaviour in space is its ASAT test. China’s first successful anti-satellite (ASAT) test in January 2007, at an altitude of 850 kilometres, resulted in creating around 3,000 pieces of space debris. More significantly, it broke the unwritten moratorium that was in place for two decades. Beijing also started developing various counterspace capabilities with the goal of competing with the US. Nevertheless, each of China’s actions have led to a spiral effect, with others seeking to match China’s actions, especially in the Indo-Pacific region, given the contested nature of Asian and global geopolitics. For example, China’s repeated ASAT tests have led to the US’ own ASAT test (Operation Burnt Frost in 2008), and India’s ASAT test (Mission Shakti in 2019). India had no plans to go down this path until China’s first ASAT test, which became a gamechanging moment for India. Even so, India did not react to it for more than a decade, but the final decision was a carefully calibrated and a direct response to China’s growing military space capabilities and its less-than responsible behaviour. Other countries like Japan and France are also contemplating moves in this direction. Australia may not be far behind either.

Even though it may not be linked to the uncontrolled re-entry of the Chinese rocket, Jonathan McDowell, an astrophysicist at the Astrophysics Center at Harvard University noted that “about six minutes after Tianhe and the CZ-5B separated, they both came close to the ISS—under 300 km, which given uncertainties in trajectory is a tad alarming.” Making this point, he added “it’s \*possible\* that this ISS/Tianhe close encounter was one of those unlikely coincidences. I’m open to that possibility, but they should still have spotted the closeness and warned NASA (or better, called a collision avoidance hold in the count).”

Rocket re-entries are not uncommon, but space powers have tried to avoid the freefalls by usually conducting controlled re-entries so that they may fall in the ocean, or they may be directed towards the so-called “graveyard” orbits that may lie there for decades. But Jonathan McDowell, an astrophysicist at the Astrophysics Center at Harvard University argues that the Chinese rocket was designed in a manner that “leaves these big stages in low orbit.” And even in the case of controlled re-entries, there are failures sometimes and they can be dangerous too. SpaceX’s rocket debris landing on a farm in Washington in March this year is a case in point.

Moriba Jah, an Associate Professor at The University of Texas at Austin argues in a media interview that such events are going to become more common, and will happen more frequently and, therefore, humanity should come together to “jointly manage near earth space as a commons in need of coordination, protocols, and practices to maximise safety, security, and sustainability.” On the NASA Administrator’s statement, Jah said this should not be “singling out China.” Certainly, this is not about apportioning blame, but China’s actions cannot be condoned either.

What can be done? Given that usable orbits in space are finite in nature, there will need to be steps taken by all the space players to ensure that their actions do not contribute to further pollution of space and make it unusable in the near term. States have to invest in technologies that would aid in cleaning up and getting rid of some of the debris. States also need to come together in developing norms, rules of the road, and legally binding and political instruments on large rocket body re-entries.

The Long March 5B episode has yet again rekindled the debate on the need for rules for rocket and large body re-entries. Brian Weeden of the Secure World Foundation, for instance, questioned why, despite all ranting about China’s rocket re-entry issues, the US State Department has “consistently oppose[d] anything stronger than voluntary guidelines.” Weeden has provided a useful Twitter thread on the US hesitancy to get on board with legal agreements on outer space. One problem is that while the US abides by international obligations, other do not. This is a concern that Weeden notes “has a grain of truth” but adds the caveat that “reality is not that definitive”.

While he is correct to note that the issue is complicated, it is also true that countries like China have a terrible track record when it comes to meeting their treaty commitments. China’s violation of its own commitments with respect to nuclear non-proliferation, or in the South China Sea and East China Sea are well-known. Given this history, it is difficult to believe that China will allow itself to be bound by any restraints on its space programme, even if it signs any of these agreements. But given the US’ almost allergic reaction to signing legal agreements that others like China may violate, it doesn’t hurt China to keep bringing up PPWT-like (Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force Against Outer Space Objects) measures every now and then. This puts the whole international community in a bind. If we have to ensure safe and uninterrupted access to space, creating a secure, sustainable, and predictable outer space framework is essential. But unless all states demonstrate a commitment to living up to existing rules and norms, creating new ones will be difficult.

#### Development of Chinese Anti-Satellite Weapons emboldens China to invade Taiwan. If China invades, the U.S. has two options. First, it doesn’t follow through on its defense commitment to Taiwan, which will hurt its alliances. Second, it defends Taiwan, which will lead to nuclear war.

Chow and Kelley on August 21st [(Brian G., policy analyst for the Institute of World Politics, Ph.D in physics from Case Western Reserve University, MBA and Ph.D in finance from the University of Michigan,and Brandon, graduate of Georgetown’s School of Foreign Service) “China’s Anti-Satellite Weapons Could Conquer Taiwan—Or Start a War,” National Interest, 8/21/2021] JL

If current trends hold, then China’s Strategic Support Force will be capable by the late 2020s of holding key U.S. space assets at risk. Chinese military doctrine, statements by senior officials, and past behavior all suggest that China may well believe threatening such assets to be an effective means of deterring U.S. intervention. If so, then the United States would face a type of “Sophie’s Choice”: decline to intervene, potentially leading allies to follow suit and Taiwan to succumb without a fight, thereby enabling Xi to achieve his goal of “peacefully” snuffing out Taiwanese independence; or start a war that would at best be long and bloody and might well even cross the nuclear threshold.

This emerging crisis has been three decades in the making. In 1991, China watched from afar as the United States used space-enabled capabilities to obliterate the Iraqi military from a distance in the first Gulf War. The People’s Liberation Army quickly set to work developing capabilities targeted at a perceived Achilles’ heel of this new American way of war: reliance on vulnerable space systems.

This project came to fruition with a direct ascent ASAT weapons test in 2007, but the test was limited in two key respects. First, it only reached low Earth orbit. Second, it generated thousands of pieces of long-lasting space junk, provoking immense international ire. This backlash appears to have taken China by surprise, driving it to seek new, more usable ASAT types with minimal debris production. Now, one such ASAT is nearing operational status: spacecraft capable of rendezvous and proximity operations (RPOs).

Such spacecraft are inevitable and cannot realistically be limited. The United States, European Union, China, and others are developing them to provide a range of satellite services essential to the new space economy, such as in situ repairs and refueling of satellites and active removal of space debris. But RPO capabilities are dual-use: if a satellite can grapple space objects for servicing, then it might well be capable of grappling an adversary’s satellite to move it out of its servicing orbit. Perhaps it could degrade or disable it by bending or disconnecting its solar panels and antennas all while producing minimal debris.

This is a serious threat, primarily because no international rules presently exist to limit close approaches in space. Left unaddressed, this lacuna in international law and space policy could enable a prospective attacker to pre-position, during peacetime, as many spacecraft as they wish as close as they wish to as many high-value targets as they wish. The result would be an ever-present possibility of sudden, bolt-from-the-blue attacks on vital space assets—and worse, on many of them at once.

China has conducted at least half a dozen tests of RPO capabilities in space since 2008, two of which went on for years. Influential space experts have noted that these tests have plausible peaceful purposes and are in many cases similar to those conducted by the United States. This, however, does not make it any less important to establish effective legal, policy, and technical counters to their offensive use. Even if it were certain that these capabilities are intended purely for peaceful applications—and it is not at all clear that that is the case—China (or any other country) could at any time decide to repurpose these capabilities for ASAT use.

There is still time to get out ahead of this threat, but likely not for much longer. China’s RPO capabilities have, thus far, lagged about five years behind those of the United States. There are reasons to believe this gap may close, but even assuming that it holds, we should expect to see China demonstrate an operational dual-use rendezvous spacecraft by around 2025. (The first instance of a U.S. commercial satellite docking with another satellite to change its orbit occurred in February 2020.)

At the same time, China is expanding its capacity for rapid spacecraft manufacturing. The Global Times reported in January that China’s first intelligent mass production line is set to produce 240 small satellites per year. In April, Andrew Jones at SpaceNews reported that China is developing plans to quickly produce and loft a thirteen thousand-satellite national internet megaconstellation. It is not unreasonable to assume that China could manufacture two hundred small rendezvous ASAT spacecraft by 2029, possibly more.

If this happens, and Beijing was to decide in 2029 to launch these two hundred small RPO spacecraft and position them in close proximity to strategically vital assets, then China would be able to simultaneously threaten disablement of the entire constellations of U.S. satellites for missile early warning (about a dozen satellites with spares included); communications in a nuclear-disrupted environment (about a dozen); and positioning, navigation, and timing (about three dozen); along with several dozen key communications, imagery, and meteorology satellites. Losing these assets would severely degrade U.S. deterrence and warfighting capabilities, yet once close pre-positioning has occurred such losses become almost impossible to prevent. For this reason, such pre-positioning could conceivably deter the United States from coming to Taiwan’s aid due to the prospect that intervention would spur China to disable these critical space systems. Without their support, the war would be much bloodier and costlier—a daunting proposition for any president.

Should the United States fail to intervene, the consequences would be disastrous for both Washington and its allies in East Asia, and potentially the credibility of U.S. defense commitments around the globe. Worse yet, however, might be what could happen if China believes that such a threat will succeed but proves to be wrong. History is rife with examples of major wars arising from miscalculations such as this, and there are many pathways by which such a situation could easily escalate out of control to a full-scale conventional conflict or even to nuclear use.

#### Cementing America’s lead in the commercial space industry is key to preserve hegemony

Autry and Kwast in 2019 [(Greg, a clinical professor of space leadership, policy, and business at Arizona State University’s Thunderbird School of Global Management. He served on the 2016 NASA transition team and as the White House liaison at NASA in 2017. He is the chair of the Safety Working Group for the U.S. Federal Aviation Administration’s Commercial Space Transportation Advisory Committee.) (Steve, a Lieutenant General and commander of Recruiting, Training, Educating and Development for the Air Force. He is an astronautical engineer and Harvard Fellow in Public Policy.) “America Is Losing the Second Space Race to China” Foreign Policy, 8/22/2019. https://foreignpolicy.com/2019/08/22/america-is-losing-the-second-space-race-to-china/] BC

The private sector can give the United States a much-needed rocket boost.

The current U.S. space defense strategy is inadequate and on a path to failure. President Donald Trump’s vision for a Space Force is big enough. As he said on June 18, “It is not enough to merely have an American presence in space. We must have American dominance in space.” But the Air Force is not matching this vision. Instead, the leadership is currently focused on incremental improvements to existing equipment and organizational structures. Dominating the vast and dynamic environment of space will require revolutionary capabilities and resources far deeper than traditional Department of Defense thinking can fund, manage, or even conceive of. Success depends on a much more active partnership with the commercial space industry— and its disruptive capabilities.

U.S. military space planners are preparing to repeat a conflict they imagined back in the 1980s, which never actually occurred, against a vanished Soviet empire. Meanwhile, China is executing a winning strategy in the world of today. It is burning hard toward domination of the future space markets that will define the next century. They are planning infrastructure in space that will control 21st-century telecommunications, energy, transportation, and manufacturing. In doing so, they will acquire trillion-dollar revenues as well as the deep capabilities that come from continuous operational experience in space. This will deliver space dominance and global hegemony to China’s authoritarian rulers.

Despite the fact that many in the policy and intelligence communities understand exactly what China is doing and have been trying to alert leadership, Air Force leadership has convinced the White House to fund only a slightly better satellite command with the same leadership, while sticking a new label onto their outmoded thinking. A U.S. Space Force or Corps with a satellite command will never fulfill Trump’s call to dominate space. Air Force leadership is demonstrating the same hubris that Gen. George Custer used in convincing Congress, over President Ulysses S. Grant’s better experience intuition, that he could overtake the Black Hills with repeating rifles and artillery. That strategy of technological overconfidence inflamed conflict rather than subduing it, and the 7th Cavalry were wiped out at the Battle of the Little Bighorn.

The West was actually won by the settlers, ranchers, miners, and railroad barons who were able to convert the wealth of the territory itself into the means of holding it. They laid the groundwork that made the 20th century the American Century and delivered freedom to millions of people in Europe and Asia. Of course, they also trampled the indigenous people of the American West in their wake—but empty space comes with no such bloody cost. The very emptiness and wealth of this new, if not quite final, frontier, however, means that competition for resources and strategic locations in cislunar space (between the Earth and moon) will be intense over the next two decades. The outcome of this competition will determine the fate of humanity in the next century.

China’s impending dominance will neutralize U.S. geopolitical power by allowing Beijing to control global information flows from the high ground of space. Imagine a school in Bolivia or a farmer in Kenya choosing between paying for a U.S. satellite internet or image provider or receiving those services for free as a “gift of the Chinese people.” It will be of little concern to global consumers that the news they receive is slanted or that searches for “free speech” link to articles about corruption in Western democracies. Nor will they care if concentration camps in Tibet and the Uighur areas of western China are obscured, or if U.S. military action is presented as tyranny and Chinese expansion is described as peacekeeping or liberation.

China’s aggressive investment in space solar power will allow it to provide cheap, clean power to the world, displacing U.S. energy firms while placing a second yoke around the developing world. Significantly, such orbital power stations have dual use potential and, if properly designed, could serve as powerful offensive weapons platforms.

China’s first step in this process is to conquer the growing small space launch market. Beijing is providing nominally commercial firms with government-manufactured, mobile intercontinental ballistic missiles they can use to dump launch services on the market below cost. These start-ups are already undercutting U.S. pricing by 80 percent. Based on its previous success in using dumping to take out U.S. developed industries such as solar power modules and drones, China will quickly move upstream to attack the leading U.S. launch providers and secure a global commercial monopoly. Owning the launch market will give them an unsurmountable advantage against U.S. competitors in satellite internet, imaging, and power.

The United States can still build a strategy to win. At this moment, it holds the competitive advantage in every critical space technology and has the finest set of commercial space firms in the world. It has pockets of innovative military thinkers within groups like the Defense Innovation Unit, under Mike Griffin, the Pentagon’s top research and development official. If the United States simply protects the intellectual property its creative minds unleash and defend its truly free markets from strategic mercantilist attack, it will not lose this new space race. The United States has done this before. It beat Germany to the nuclear bomb, it beat the Soviet Union to the nuclear triad, and it won the first space race.

None of those victories was achieved by embracing the existing bureaucracy. Each of them depended on the president of the day following the only proven path to victory in a technological domain: establish a small team with a positively disruptive mindset and empower that team to investigate a wide range of new concepts, work with emerging technologies, and test innovative strategies. Today that means giving a dedicated Space Force the freedom to easily partner with commercial firms and leverage the private capital in building sustainable infrastructure that actually reduces the likelihood of conflict while securing a better economic future for the nation and the world.

#### United States hegemony in this decade is critical to prevent global war and peacefully end violent Chinese power-grabs **Erickson and Collins on October 21st** [(Andrew, A professor of strategy in the U.S. Naval War College’s China Maritime Studies Institute)(Gabriel, Baker Botts fellow in energy and environmental regulatory affairs at Rice University’s Baker Institute for Public Policy) “A Dangerous Decade of Chinese Power Is Here,” Foreign Policy, 10/18/2021] U.S. and allied policymakers are facing the most important foreign-policy challenge of the 21st century. China’s power is peaking; so is the political position of Chinese President Xi Jinping and the Chinese Communist Party’s (CCP) domestic strength. In the long term, China’s likely decline after this peak is a good thing. But right now, it creates a decade of danger from a system that increasingly realizes it only has a short time to fulfill some of its most critical, long-held goals.

Within the next five years, China’s leaders are likely to conclude that its deteriorating demographic profile, structural economic problems, and technological estrangement from global innovation centers are eroding its leverage to annex Taiwan and achieve other major strategic objectives. As Xi internalizes these challenges, his foreign policy is likely to become even more accepting of risk, feeding on his nearly decadelong track record of successful revisionist action against the rules-based order. Notable examples include China occupying and militarizing sub-tidal features in the South China Sea, ramping up air and maritime incursions against Japan and Taiwan, pushing border challenges against India, occupying Bhutanese and Tibetan lands, perpetrating crimes against humanity in Xinjiang, and coercively enveloping Hong Kong.

The relatively low-hanging fruit is plucked, but Beijing is emboldened to grasp the biggest single revisionist prize: Taiwan.

Beijing’s actions over the last decade have triggered backlash, such as with the so-called AUKUS deal, but concrete constraints on China’s strategic freedom of action may not fully manifest until after 2030. It’s remarkable and dangerous that China has paid few costs for its actions over the last 10 years, even as its military capacities have rapidly grown.

Beijing will likely conclude that under current diplomatic, economic, and force postures for both “gray zone” and high-end scenarios, the 2021 to late 2020s timeframe still favors China—and is attractive for its 68-year-old leader, who seeks a historical achievement at the zenith of his career.

U.S. planners must mobilize resources, effort, and risk acceptance to maximize power and thereby deter Chinese aggression in the coming decade—literally starting now—and innovatively employ assets that currently exist or can be operationally assembled and scaled within the next several years. That will be the first step to pushing back against China during the 2020s—a decade of danger—before what will likely be a waning of Chinese power.

As Beijing aggressively seeks to undermine the international order and promotes a narrative of inevitable Chinese strategic domination in Asia and beyond, it creates a dangerous contradiction between its goals and its medium-term capacity to achieve them. China is, in fact, likely nearing the apogee of its relative power; and by 2030 to 2035, it will cross a tipping point from which it may never recover strategically. Growing headwinds constraining Chinese growth, while not publicly acknowledged by Beijing, help explain Xi’s high and apparently increasing risk tolerance. Beijing’s window of strategic opportunity is sliding shut.

China’s skyrocketing household debt levels exemplify structural economic constraints that are emerging much earlier than they did for the United States when it had similar per capita GDP and income levels. Debt is often a wet blanket on consumption growth. A 2017 analysis published by the Bank for International Settlements found that once the household debt-to-GDP ratio in a sample of 54 countries exceeded 60 percent, “the negative long-run effects on consumption tend to intensify.” China’s household debt-to-GDP ratio surpassed that empirical danger threshold in late 2020. Rising debt service burdens thus threaten Chinese consumers’ capacity to sustain the domestic consumption-focused “dual circulation” economic model that Xi and his advisors seek to build. China’s growth record during the past 30 years has been remarkable, but past exceptionalism does not confer future immunity from fundamental demographic and economic headwinds.

As debt levels continue to rise at an absolute level that has accelerated almost continuously for the past decade, China also faces a hollowing out of its working-age population. This critical segment peaked in 2010 and has since declined, with the rate from 2015 to 2020 nearing 0.6 percent annually—nearly twice the respective pace in the United States. While the United States faces demographic challenges of its own, the disparity between the respective paces of decline highlights its relative advantage compared to its chief geopolitical competitor. Moreover, the United States can choose to access a global demographic and talent dividend via immigration in a way China simply will not be able to do.

Atop surging debt and worsening demographics, China also faces resource insecurity. China’s dependence on imported food and energy has grown steadily over the past two decades. Projections from Tsinghua University make a compelling case that China’s oil and gas imports will peak between 2030 and 2035. As China grapples with power shortages, Beijing has been reminded that supply shortfalls equal to even a few percentage points of total demand can have outsized negative impacts.

Domestic resource insufficiency by itself does not hinder economic growth—as the Four Asian Tigers’ multi-decade boom attests. But China is in a different position. Japan and South Korea never had to worry about the U.S. Navy interdicting inbound tankers or grain ships. In fact, the United States was avowedly willing to use military force to protect energy flows from the Persian Gulf region to its allies. Now, as an increasingly energy-secure United States pivots away from the Middle East toward the Indo-Pacific, there is a substantial probability that energy shipping route protection could be viewed in much more differentiated terms—with oil and liquefied natural gas cargoes sailing under the Chinese flag viewed very differently than cargoes headed to buyers in other regional countries.

Each of these dynamics—demographic downshifts, rising debts, resource supply insecurity—either imminently threatens or is already actively interfering with the CCP’s long-cherished goal of achieving a “moderately prosperous society.” Electricity blackouts, real estate sector travails (like those of Evergrande) that show just how many Chinese investors’ financial eggs now sit in an unstable $52 trillion basket, and a solidifying alignment of countries abroad concerned by aggressive Chinese behavior all raise questions about Xi’s ability to deliver. With this confluence of adverse events only a year before the next party congress, where personal ambition and survival imperatives will almost drive him to seek anointment as the only Chinese “leader for life” aside from former leader Mao Zedong, the timing only fuels his sense of insecurity. Xi’s anti-corruption campaigns and ruthless removal of potential rivals and their supporters solidified his power but likely also created a quiet corps of opponents who may prove willing to move against him if events create the perception he’s lost the “mandate of heaven.” Accordingly, the baseline assumption should be that Xi’s crown sits heavy and the insecurity induced is thereby intense enough to drive high-stake, high-consequence posturing and action.

While Xi is under pressure to act, the external risks are magnified because so far, he has suffered few consequences from taking actions on issues his predecessors would likely never have gambled on. Reactions to party predations in Xinjiang and Hong Kong have been restricted to diplomatic-signaling pinpricks, such as sanctioning responsible Chinese officials and entities, most of whom lack substantial economic ties to the United States. Whether U.S. restraint results from a fear of losing market access or a belief that China’s goals are ultimately limited is not clear at this time.

While the CCP issues retaliatory sanctions against U.S. officials and proclaims a triumphant outcome to its hostage diplomacy, these tactical public actions mask a growing private awareness that China’s latitude for irredentist action is poised to shrink. Not knowing exactly when domestic and external constraints will come to bite—but knowing that when Beijing sees the tipping point in its rearview mirror, major rivals will recognize it too—amplifies Xi and the party’s anxiety to act on a shorter timeline. Hence the dramatic acceleration of the last few years.

Just as China is mustering its own strategic actions, so the United States must also intensify its focus and deployment of resources. The United States has taken too long to warm up and confront the central challenge, but it retains formidable advantages, agility, and the ability to prevail—provided it goes all-in now. Conversely, if Washington fails to marshal its forces promptly, its achievements after 2030 or 2035 will matter little. Seizing the 2020s would enable Beijing to ~~cripple~~ [destroy] the free and open rules-based order and entrench its position by economically subjugating regional neighbors (including key U.S. treaty allies) to a degree that could offset the strategic headwinds China now increasingly grapples with.

Deterrence is never certain. But it offers the highest probability of avoiding the certainty that an Indo-Pacific region dominated by a CCP-led China would doom treaty allies, threaten the U.S. homeland, and likely set the stage for worse to come. Accordingly, U.S. planners should immediately mobilize resources and effort as well as accept greater risks to deter Chinese action over the critical next decade.

The greatest threat is armed conflict over Taiwan, where U.S. and allied success or failure will be fundamental and reverberate for the remainder of the century. There is a high chance of a major move against Taiwan by the late 2020s—following an extraordinary ramp-up in People’s Liberation Army capabilities and before Xi or the party state’s power grasp has ebbed or Washington and its allies have fully regrouped and rallied to the challenge.

So how should policymakers assess the potential risk of Chinese action against Taiwan reaching dangerous levels by 2027 or possibly even earlier—as emphasized in the testimonies of Adms. Philip Davidson and John Aquilino? In June, Chairman of the Joint Chiefs Gen. Mark Milley testified to the House of Representatives that Xi had “challenged the People’s Liberation Army to accelerate their modernization programs to develop capabilities to seize Taiwan and move it from 2035 to 2027,” although China does not currently have the capabilities or intentions to conduct an all-out invasion of mainland Taiwan.

U.S. military leaders’ assessments are informed by some of the world’s most extensive and sophisticated internal information. But what’s striking is open-source information available to everyone suggests similar things. Moving forward, a number of open-source indicators offer valuable “early warning lights” that can help policymakers more accurately calibrate both potential timetables and risk readings as the riskiest period of relations—from 2027 onward—approaches.

Semiconductors supply self-sufficiency. Taiwan is the “OPEC+” of semiconductors, accounting for approximately two-thirds of global chip foundry capacity. A kinetic crisis would almost certainly disrupt—and potentially even completely curtail—semiconductor supplies. China presently spends even more each year on semiconductor imports (around $380 billion) than it does on oil, but much of the final products are destined for markets abroad. Taiwan is producing cutting-edge 5-nanometer and 7-nanometer chips, but China produces around 80 percent of the rest of the chips in the world. The closer China comes to being able to secure “good enough” chips for “inside China-only” needs, the less of a constraint this becomes.

Crude oil, grain, strategic metals stockpiles—the commercial community (Planet Labs, Ursa Space Systems, etc.) has developed substantial expertise in cost-effectively tracking inventory changes for key input commodities needed to prepare for war.

Electric vehicle fleet size—the amount of oil demand displaced by electric vehicles varies depending on miles driven, but the more of China’s car fleet that can be connected to the grid (and thus powered by blockade-resistant coal), the less political burden Beijing will face if it has to weather a maritime oil blockade imposed in response to actions it took against Taiwan or other major revisionist adventures. China’s passenger vehicle fleet, now approximately 225 million units strong, counts nearly 6.5 million electric vehicles among its ranks, the lion’s share of which are full-battery electrics. China’s State Council seeks to have 20 percent of new vehicles sold in China be electric vehicles by 2025. This target has already basically been achieved over the last few months, meaning at least 3.5 to 4 million (and eventually many more) new elective vehicles will enter China’s car fleet each year from now on.

Local concentration of maritime vessels—snap exercises with warships, circumnavigations, and midline tests with swarms of aircraft highlight the growing scale of China’s threat to Taiwan. But these assets alone cannot invade the island. To capture and garrison, Beijing would need not only air, missile, naval, and special operations forces but also the ability to move lots of equipment and—at the very least—tens of thousands of personnel across the Taiwan Strait. As such, Beijing would have to amass maritime transport assets. And given the scale required, this would alter ship patterns elsewhere along China’s coast in ways detectable with artificial intelligence-facilitated imagery analysis from firms like Planet Labs (or national assets).

Only the most formidable, agile American and allied deterrence can kick the can down the road long enough for China’s slowdown to shut the window of vulnerability. Holding the line is likely to require frequent and sustained proactive enforcement actions to disincentivize full-frontal Chinese assaults on the rules-based order in the Indo-Pacific. Chinese probing behavior and provocations must be met with a range of symmetric and asymmetric responses that impose real costs, such as publishing assets owned by Chinese officials abroad, cyber interference with China’s technological social control apparatus, “hands on” U.S. Navy and Coast Guard enforcement measures against Maritime Militia-affiliated vessels in the South China Sea, intensified air and maritime surveillance of Chinese naval bases, and visas and resettlement options to Hong Kongers, Uyghurs, and other threatened Chinese citizens—including CCP officials (and their families) who seek to defect and/or leave China. U.S. policymakers must make crystal clear to their Chinese counterparts that the engagement-above-all policies that dominated much of the past 25 years are over and the risks and costs of ongoing—and future—adventurism will fall heaviest on China.

#### Nuclear war causes extinction – famine and climate change

Starr in 2015 [(Steven, Director of the University of Missouri’s Clinical Laboratory Science Program and a senior scientist at the Physicians for Social Responsibility) “Nuclear War, Nuclear Winter, and Human Extinction,” Federation of American Scientists, 10/14/2015] DD  
While it is impossible to precisely predict all the human impacts that would result from a nuclear winter, it is relatively simple to predict those which would be most profound. That is, a nuclear winter would cause most humans and large animals to die from nuclear famine in a mass extinction event similar to the one that wiped out the dinosaurs.

Following the detonation (in conflict) of US and/or Russian launch-ready strategic nuclear weapons, nuclear firestorms would burn simultaneously over a total land surface area of many thousands or tens of thousands of square miles. These mass fires, many of which would rage over large cities and industrial areas, would release many tens of millions of tons of black carbon soot and smoke (up to 180 million tons, according to peer-reviewed studies), which would rise rapidly above cloud level and into the stratosphere. [For an explanation of the calculation of smoke emissions, see Atmospheric effects & societal consequences of regional scale nuclear conflicts.]

The scientists who completed the most recent peer-reviewed studies on nuclear winter discovered that the sunlight would heat the smoke, producing a self-lofting effect that would not only aid the rise of the smoke into the stratosphere (above cloud level, where it could not be rained out), but act to keep the smoke in the stratosphere for 10 years or more. The longevity of the smoke layer would act to greatly increase the severity of its effects upon the biosphere.

Once in the stratosphere, the smoke (predicted to be produced by a range of strategic nuclear wars) would rapidly engulf the Earth and form a dense stratospheric smoke layer. The smoke from a war fought with strategic nuclear weapons would quickly prevent up to 70% of sunlight from reaching the surface of the Northern Hemisphere and 35% of sunlight from reaching the surface of the Southern Hemisphere. Such an enormous loss of warming sunlight would produce Ice Age weather conditions on Earth in a matter of weeks. For a period of 1-3 years following the war, temperatures would fall below freezing every day in the central agricultural zones of North America and Eurasia. [For an explanation of nuclear winter, see Nuclear winter revisited with a modern climate model and current nuclear arsenals: Still catastrophic consequences.]

Nuclear winter would cause average global surface temperatures to become colder than they were at the height of the last Ice Age. Such extreme cold would eliminate growing seasons for many years, probably for a decade or longer. Can you imagine a winter that lasts for ten years?

The results of such a scenario are obvious. Temperatures would be much too cold to grow food, and they would remain this way long enough to cause most humans and animals to starve to death.

Global nuclear famine would ensue in a setting in which the infrastructure of the combatant nations has been totally destroyed, resulting in massive amounts of chemical and radioactive toxins being released into the biosphere. We don’t need a sophisticated study to tell us that no food and Ice Age temperatures for a decade would kill most people and animals on the planet.  Would the few remaining survivors be able to survive in a radioactive, toxic environment?

### 5

#### The 5G tech war is not just “out there” but in here – debate is a microcosm of the war. The so-called “neutrality” of fairness, predictability, stasis, clash, and topic education are ideological means of entry in which the protocols are not a “negotiation of competing models” but pre-determined by the logistics of 5G infiltration that seeks to fix those that “need to be fixed”. Limits are not just the limits of the topic but the practices of the community – clash of civilization debates, the refusal to invite certain teams to Round Robins, policing and following around black and brown debaters because their arguments are “unsafe”, black debaters getting the cops called on them because their music is too loud, all prove the uniqueness question of the race war and the inseparability of the internal debate from debate as an activity.

#### This card frames the uniqueness question of your ballot

[Phillip Schneider](https://www.wakingtimes.com/category/contributors/phillip-schneider/) 4/1/2020 (a student as well as a staff writer and assistant editor for [Waking Times](https://www.wakingtimes.com/), "This Particle Physicist Believes that 5G is a Directed Energy Weapon Designed for Control," <https://www.wakingtimes.com/2020/04/01/this-particle-physicist-believes-that-5g-is-a-directed-energy-weapon-designed-for-control/>)

Physicist Dr. Katherine Horton believes that not only is 5G toxic to your health, but it’s also a high-tech weapon of mass destruction that could be used to kill unwanted dissidents without leaving a trace.

Horton has a PhD in particle physics from Oxford University and has worked on some of the most interesting and dangerous projects in the world, including the famous Hadron Collider (CERN) in Genova Switzerland, and the slightly less well-known Electronsyncrotron (DESY) in Hamburg, Germany. While at Oxford she also worked as a research assistant at St. Johns College where she studied medical physics and human systems, including systems analysis research of economics, law, and crime.

Her perspective on the technologies of societal control are highly valuable to the global conversation about the 5G rollout.

“The 5G system should be best imagined as the government, or this shadowy group that has infested the government, taking over every city on the planet and every village and even the smallest town and even the forest, where you think there is nothing, and putting up hidden machine guns that follow you and your family, pointing right at you.” – Dr. Katherine Horton

D[irected energy weapons](https://www.collective-evolution.com/2019/07/31/5g-is-the-ultimate-directed-energy-weapon-system-says-particle-physicist/) are the ultimate tool of tyrannical government to control a population. With this technology, shadowy state actors can track all of our movements, target dissidents, and even incapacitate anyone they want without leaving behind a shred of evidence.

READ: [THE 5G TROJAN HORSE: WHAT YOU’RE NOT BEING TOLD](https://www.wakingtimes.com/2020/02/22/the-5g-trojan-horse-what-youre-not-being-told/)

Imagine the slave state that is being ushered in around the world as we speak. In China, your actions are monitored 24/7, and a [social credit score](https://www.wakingtimes.com/2019/12/30/whats-your-social-credit-score/) is applied to you by the government. If your score drops too low, you can be cut off from travel, made to pay higher hotel fees, your kids might not be able to attend their preferred college or high school, and even your pets can be [taken away](https://www.vox.com/the-goods/2018/11/2/18057450/china-social-credit-score-spend-frivolously-video-games) by the state.

It is known that [Chinese critics of overreaching government](https://www.wakingtimes.com/2020/02/12/watch-missing-coronavirus-journalists-call-for-national-revolution-against-communism/) are lowest on the social credit list. In the United States, not only are corporations like [Facebook](https://phillipschneider.com/facebook-follows-in-footsteps-of-communist-china-assigns-users-trustworthiness-rating/), Apple, and Google creating their own forms of this score for their users, but the NSA and [GCHQ](https://www.gchq.gov.uk/) have also employed similar projects, one of which is named [Pattern of Life](https://www.theguardian.com/technology/2013/jul/07/nsa-gchq-metadata-reassurances).

Remember that the list of consequences for a low score in China is always growing, and that same system is slowly being brought to the US via mass data collection, secret government programs, and the normalization of surveillance.

Add to this the use of 5G directed energy weapons.

If history is any indication of the future, it’s not farfetched to believe that we’re inching our way into a world where a government computer algorithm can decide that you’re a revolutionary, and you can be outright killed by technology without warning. It doesn’t even have to be a computer algorithm that makes the decision, it could be anyone in a position of power who has access to this technology. That’s the world in which Dr. Horton is describing.

To make matters worse, none of the information about directed energy weapons is being publicized by the mainstream media. [5G](https://www.wakingtimes.com/?s=5g) is being sold as nothing more than a better version of 4G, but the technology is completely different. To put it simply, 5G uses pulsating beams as opposed to outward waves, and the wavelengths of 5G are much closer to the gamma rays of radioactive activity than to regular radio waves.

As Dr. Horton points out in her interview above, the American weapons manufacturer Deagel predicts publicly on their website that 100 million people will die in the US by the year 2025.

Despite warnings from scientists and concerned citizens about the many dangers that 5G poses to our health and freedom, President Trump just passed the “[Secure 5G and Beyond Act of 2020](https://www.activistpost.com/2020/03/trump-signs-secure-5g-and-beyond-act-of-2020-despite-security-health-and-environmental-warnings.html)”, solidifying the rollout of 5G over the entire nation.

Becoming informed about the dangers of 5G technology is most important thing you can do during the rollout. If you’re feeling particularly inspired, you can take steps to protect your privacy so that less of your data is being collected and processed by governments and corporations seeking to profile you.

Two great ways of doing this, both of which I use every day, are by using an [RFID-Blocking Wallet](http://www.healthrangerstore.com/collections/rfid?rfsn=957850.0f38d.21348) to protect your cards, and a [Virtual Private Network (VPN)](http://www.privateinternetaccess.com/pages/buy-a-vpn/1218buyavpn?invite=U2FsdGVkX18zSVCs3mB7i5NXTD4c3SV1G2u0nzY8hfs%2Cyy-L2bCGfv4VgPWVDh1emUoBChI) to encrypt all of your internet traffic so the data collectors have a harder time figuring out who you are.

#### Private actors are propagating the endless war on the human psyche. New constellations mark a new age of cyber dominance.

Mike **Dano**, 4/13/21 (Editorial Director, "Satellites poised to join 5G network topology", [https://www.lightreading.com/5g/satellites-poised-to-join-5g-network-topology-/d/d-id/768735 accessed 1/3/22](https://www.lightreading.com/5g/satellites-poised-to-join-5g-network-topology-/d/d-id/768735%20accessed%201/3/22))

Of course, satellites can already play a role in the operation of a wireless network, including a 5G network. Their role to date primarily involves backhauling traffic from a cell site that's too rural to use fiber or microwave backhaul. But that's a rare situation given the sluggish performance and eye-watering cost of most satellite Internet connections.

That situation is rapidly changing with the rise of low Earth orbit (LEO) satellite operators like [SpaceX's Starlink](https://www.lightreading.com/opticalip/starlink-surpasses-10000-users-/d/d-id/767195), [Telesat's Lightspeed](https://www.lightreading.com/iot/telesat-promises-commercial-lightspeed-leo-services-by-2023/d/d-id/767254) or [OneWeb](https://www.lightreading.com/ossbss/oneweb-exec-telco-deals-are-imminent/d/d-id/766864). Such satellite constellations promise speedy, inexpensive connections that might better serve 5G operators' backhaul needs. However, it must be noted that analysts from the likes of [Cowen](https://www.lightreading.com/4g3gwifi/starlinks-network-faces-significant-limitations-analysts-find/d/d-id/764159), [MoffettNathanson](https://www.lightreading.com/satellite/starlinks-threat-to-wired-broadband-minimal---analyst-/d/d-id/768528) and [Viasat](https://www.lightreading.com/opticalip/the-billion-dollar-fight-to-cross-digital-divide-gets-dirty/d/d-id/768652) continue to poke holes in the notion that LEO satellite constellations will be able to meet widespread demand.

But backhaul is just one topological element that satellite operators are hoping to offer in the 5G era.

For example, a growing number of startups and veteran satellite providers are looking beyond backhaul to provide Internet of Things (IoT) services in direct competition to 5G providers. For example, startup Swarm [is building tiny, phone-sized satellites](https://spectrum.ieee.org/tech-talk/telecom/wireless/swarm-takes-lora-skyhigh) that can beam a proprietary version of the LoRa Internet of Things communication standard to receivers on Earth. And Swarm isn't alone. Startup Sateliot is also promising IoT services using the 5G protocol. And longtime satellite player Iridium too is offering IoT services; already [a third](https://lightshedtmt.com/2021/03/30/iot-leo-satellites-and-share-buybacks-initiate-coverage-of-iridium-with-buy/) of its service revenues come from IoT applications.

How such services might be integrated into a 5G network remains to be seen.

However, there's another group of satellite players looking to provide 5G services directly to smartphone users. These companies essentially want to act as a mobile roaming partner in space, offering connections to 5G users who stray outside the reach of their provider's terrestrial network.

The newest entrant in this sector is Omnispace, which [appears to be working](https://www.lightreading.com/5g/omnispaces-tests-hint-at-discussions-with-dish-verizon-us-space-force/d/d-id/768675) with the likes of Verizon, Dish Network and the US Space Force to test 5G transmissions across its S-band 2GHz spectrum licenses. Other startups [like Lynk and AST SpaceMobile](https://www.lightreading.com/ossbss/in-5g-race-to-space-lynk-takes-lead-against-spacemobile-/d/d-id/767435) are hoping to operate similar satellite services, although they want to conduct their transmissions inside of 5G operators' existing spectrum holdings. AST SpaceMobile already has permission to do so from the likes of Vodafone and AT&T.

But the role of satellites in 5G topology doesn't end there. The 3GPP standards organization is currently looking at technology that would add non-terrestrial networks (NTN) directly into the 5G standard. NTN capability is scheduled to be part of the 3GPP's Release 17 package of specifications, [to be released next year](https://www.lightreading.com/aiautomation/the-next-version-of-5g-delayed-until-2022/d/d-id/766154). Already network testing companies like Keysight Technologies [are preparing for that opportunity](https://blogs.keysight.com/blogs/inds.entry.html/2020/10/31/non-terrestrial_netw-pUxV.html#:~:text=Part%20of%203rd%20Generation,communications%20for%20the%20first%20time.&text=Mobile%20operators%20can%20also%20use,the%20edge%20of%20their%20networks).

#### 5G is a tool of war

Manlio Dinucci, 3-31-2019, ("The Hidden Military Use of 5G Technology," No Publication, <https://www.telesurenglish.net/opinion/The-Hidden-Military-Use-of-5G-Technology-20191221-0006.html>)

While the earlier technologies were perfected to create ever more advanced smartphones, 5G is designed not only to improve their performance, but mainly to link digital systems which need enormous quantities of data in order to work automatically. The most important 5G applications will not be intended for civil use, but for the military domain.

The possibilities offered by this new technology are explained by the Defense Applications of 5G Network Technology, published by the Defense Science Board, a federal committee which provides scientific advice for the Pentagon:

“The emergence of 5G technology, now commercially available, offers the Department of Defense the opportunity to take advantage, at minimal cost, of the benefits of this system for its own operational requirements”.

In other words, the 5G commercial network, built and activated by private companies, will be used by the U.S. armed forces at a much lower expenditure than that necessary if the network were to be set up with an exclusively military goal. Military experts foresee that the 5G system will play an essential role for the use of hypersonic weapons – missiles, including those bearing nuclear warheads, which travel at a speed superior to Mach 5 (five times the speed of sound). In order to guide them on variable trajectories, changing direction in a fraction of a second to avoid interceptor missiles, it is necessary to gather, elaborate and transmit enormous quantities of data in a very short time. The same thing is necessary to activate defences in case of an attack with this type of weapon – since there is not enough time to take such decisions, the only possibility is to rely on 5G automatic systems.

This new technology will also play a key role in the battle network. With the capability of simultaneously linking millions of transceivers within a defined area, it will enable military personnel – departments and individuals – to transmit to one another, almost in real time, maps, photos and other information about the operation under way.

5G will also be extremely important for the secret services and special forces. It will enable control and espionnage systems which are far more efficient than those we use today. It will improve the lethality of killer drones and war robots by giving them the capacity of identifying, following and targeting people on the basis of facial recognition and other characteristics. The 5G network, as a weapon of high-tech capacity, will also become the target for cyber-attacks and war actions carried out with new generation weapons.

As well as the United States, this technology is under development by China and other countries. The international disagreement concerning 5G is therefore not only commercial. The military implications of 5G are almost entirely ignored, because the critics of this technology, including many scientists, are concentrating their attention on its toxic affects for health and the environement, due to exposure to very low-frequency electromagnetic fields. This engagement is of course of the greatest importance, but must be linked to research on the military use of this technology, financed indirectly by ordinary users. One of its greatest attractions, which favours the dissemination of 5G smartphones, will be the possibility of participating, by subscription, in war games of impressive realism in direct contact with players from all over the world. In this way, without realising it, the players will be financing the preparation for war – but this time it will be a real war.

#### Vote [Affirmative] to ban the appropriation of private entities through an ethic of insurrection.

comité invisible, 2007(“The Coming Insurrection”, <https://theanarchistlibrary.org/library/comite-invisible-the-coming-insurrection>) Ngong

There is no such thing as a peaceful insurrection. Weapons are necessary: it’s a question of doing everything possible to make using them unnecessary. An insurrection is more about taking up arms and maintaining an “armed presence” than it is about armed struggle. We need to distinguish clearly between being armed and the use of arms. Weapons are a constant in revolutionary situations, but their use is infrequent and rarely decisive at key turning points: August 10th 1792, March 18th 1871, October 1917. When power is in the gutter, it’s enough to walk over it. Because of the distance that separates us from them, weapons have taken on a kind of double character of fascination and disgust that can be overcome only by handling them. An authentic pacifism cannot mean refusing weapons, but only refusing to use them. Pacifism without being able to fire a shot is nothing but the theoretical formulation of impotence. Such *a priori* pacifism is a kind of preventive disarmament, a pure police operation. In reality, the question of pacifism is serious only for those who have the ability to open fire. In this case, pacifism becomes a sign of power, since it’s only in an extreme position of strength that we are freed from the need to fire. From a strategic point of view, indirect, asymmetrical action seems the most effective kind, the one best suited to our time: you don’t attack an occupying army front ally. That said, the prospect of Iraq-style urban guerilla warfare, dragging on with no possibility of taking the offensive, is more to be feared than to be desired. The *militarization* of civil war is the defeat of insurrection. The Reds had their victory in 1921, but the Russian Revolution was already lost. We must consider two kinds of state reaction. One openly hostile, one more sly and democratic. The first calls for our out and out destruction, the second, a subtle but implacable hostility, seeks only to recruit us. We can be defeated both by dictatorship and by being reduced to opposing *only* dictatorship. Defeat consists as much in losing the war as in losing the *choice* of which war to wage. Both are possible, as was proven by Spain in 1936: the revolutionaries there were defeated twice — over, by fascism and by the republic. When things get serious, the army occupies the terrain. Whether or not it engages in combat is less certain. That would require that the state be committed to a bloodbath, which for now is no more than a threat, a bit like the threat of using nuclear weapons for the last fifty years. Though it has been wounded for a long while, the beast of the state is still dangerous. A massive crowd would be needed to challenge the army, invading its ranks and fraternizing with the soldiers. We need a March 18th 1871. When the army is in the street, we have an insurrectionary situation. Once the army engages, the outcome is precipitated. Everyone finds herself forced to take sides, to choose between anarchy and the fear of anarchy. An insurrection triumphs as a political force. It is not impossible to defeat an army politically. The goal of any insurrection is to become irreversible. It becomes irreversible when you’ve defeated both authority and the need for authority, property and the taste for appropriation, hegemony and the desire for hegemony. That is why the insurrectionary process carries within itself the form of its victory, or that of its defeat. Destruction has never been enough to make things irreversible. What matters is how it’s done. There are ways of destroying that unfailingly provoke the return of what has been crushed. Whoever wastes their energy on the corpse of an order can be sure that this will arouse the desire for vengeance. Thus, wherever the economy is blocked and the police are neutralized, it is important to invest as little pathos as possible in overthrowing the authorities. They must be deposed with the most scrupulous indifference and derision.

#### Insurrectionist movements are ongoing resistances that happen in our thoughts, actions, provocations, and explorations. Our model of debate seeks to allow for beautiful insurgencies from the ground up. This is work without a beginning, without an end, a constant planning as opposed to policy that we take with us wherever we go. Shukaitis and Graeber 7 Stevphen Shukaitis is Senior Lecturer at the University of Essex, Centre for Work and Organization, and a member of the Autonomedia editorial collective. David Rolfe Graeber is an American anthropologist and anarchist activist, perhaps best known for his 2011 volume Debt: The First 5000 Years. He is professor of anthropology at the London School of Economics. “Constituent Imagination: Militant Investigations // Collective Theorization.” ISBN 978-1-904859-35-2.  Library of Congress Number: 2006924199 ©2007)

Thoughts. Provocations. Explorations. Forms of investigation and social research that expand possibilities for political action, proliferating tactics of resistance through the constituent power of the imagination. Walking, we ask questions, not from the perspective of the theorist removed and separate from organizing, but rather from within and as part of the multiple and overlapping cycles and circuits of struggle. For the removed theorist, movements themselves are mere abstractions, pieces of data to be categorized, analyzed, and fixed. **The work of militant investigation is multiple**, collectively extending forms of antagonism to new levels of understanding, composing flesh-made words from immanent processes of resistance. Far from vanguardist notions of intellectual practice that translate organizing strategies and concepts for populations who are believed to be too stupid or unable to move beyond trade union consciousness, it is a process of collective wondering and wandering that is not afraid to admit that the question of how to move forward is always uncertain, difficult, and never resolved in easy answers that are eternally correct. As an open process, **militant investigation discovers new possibilities within the present**, turning bottlenecks and seeming dead ends into new opportunities for joyful insurgency. A beautiful example of this is John Holloway’s book, *Change the World Without Taking Power*. Holloway, a soft-spoken Scottish political philosopher, was associated with the “Open Marxism” school developed at the University of Edinburgh where he taught in the 1970s and ’80s. In 1991, he moved to Mexico where he took a position with the Instituto de Humanidades y Ciencias Sociales in the Universidad Autónoma de Puebla. After the Zapatista rebellion broke out in 1994, he quickly became one of its chief intellectual supporters. In 1998, he helped compile a book of essays on the Zapatistas called *Zapatista! Reinventing Revolution in Mexico*; this was his attempt to think through the implications of this new revolutionary paradigm, one which rejected classic Marxist ideas of vanguardism and the very project of trying to seize state power for one of building autonomous com- munities rooted in new forms of direct democracy, using the categories of Marxist theory. The result was an extremely dense book. At certain points, it reads like a mixture of Marxist jargon and lyric poetry: In the beginning is the scream. We scream. When we write or when we read, it is easy to forget that the beginning is not the word, but the scream. Faced with the mutilation of human lives by capitalism, a scream of sadness, a scream of horror, a scream of anger, a scream of refusal: NO. The starting point of theoretical reflection is opposition, negativity, struggle. It is from rage that thought is born, not from the pose of reason, not from the reasoned-sitting-back-and-reflecting-on-the-mysteries-of-existence that is the conventional image of the thinker. We start from negation, from dissonance. The dissonance can take many shapes. An inarticulate mumble of discontent, tears of frustration, a scream of rage, a confident roar. An unease, a confusion, a longing, a critical vibration. More than anything else, it’s a book about knowledge. Holloway argues that reality is a matter of humans doing and making things together: what we perceive as fixed self-identical objects are really processes. **The only reason we insist on treating objects as anything else is because, if we saw them as they really are, as mutual projects, it would be impossible for anyone to claim ownership of them.** All liberatory struggle therefore is ultimately the struggle against identity. Forms of knowledge that simply arrange and classify reality from a distance—what Holloway refers to as “knowledge- about”—may be appropriate for a vanguard party that wants to claim the right to seize power and impose itself on the basis of some privileged “scientific” understanding, but ultimately it can only work to reinforce structures of domination. **True revolutionary knowledge would have to be different. It would have to be a pragmatic form of knowledge that lays bare all such pretensions; a form of knowledge deeply embedded in the logic of transformational practice.** Furious debates ensued. Leninists and Trotskyites lambasted the book as utopian for adopting what they considered a naïve anarchist position—one that was completely ignorant of political realities. Anarchists were alternately inspired and annoyed, often noting that Holloway seemed to echo anarchist ideas without ever mentioning them, instead writing as if his positions emerged naturally from a correct reading of classic Marxist texts. Others objected to the way he read the texts. Supporters of Toni Negri’s Spinozist version of Marxism denounced the book as so much Hegelian claptrap; others suggested that Holloway’s argument that any belief in self-identical objects was a reflection of capitalist logic seemed to imply that capitalism had been around since the invention of language, which ultimately made it very difficult to imagine an alternative. In Latin America, where the battle was particularly intense, a lot of the arguments turned around very particular questions of revolutionary strategy. Who has the better model: the Zapatistas of Chiapas or Chavez’s Bolivarian Revolution in Venezuela? Were the Argentine radicals who over- threw four successive regimes in December of 2001 right to refuse seizing power, to reject the entire domain of formal politics and try to create their own autonomous institutions? Or had they allowed an opportunity for genuine revolutionary change to slip through their grasp? For many in the global justice movement in Europe and North America, the book provided the perfect counterpoint to Michael Hardt and Negri’s *Empire*, then being hailed in the media as the bible of the movement. Where Hardt and Negri were drawing on an Italian autonomist tradition that saw capital not as imposing itself on labor but as constantly having to adjust itself to the power of workers’ struggle, Holloway was arguing that this approach did not go nearly far enough. In fact, capital was labor and capitalism the system that makes it impossible for us to see this. Capitalism is something we make every day and the moment we stop making it, it will cease to exist. There were endless Internet debates. Seminars and reading groups were held comparing the two arguments in probably a dozen different languages.

### 6

#### The appropriation of outer space by private entities via Large Satellite Constellations in Lower Earth Orbit is unjust.

Takaya et al 18 “The Principle of Non-Appropriation and the Exclusive Uses of LEO by Large Satellite Constellations” Yuri Takaya-Umehara [Visiting researcher at the University of Tokyo since April 2017. She was affiliated to the Kobe University to provide a course on space law to post-graduate students (2011-2017). She chairs a working group on the formulation of global norms in space law organized by the Keio University since 2018. She obtained her Ph.D. degree at the IDEST of Paris XI University in France, LL.M. at the Leiden University in the Netherlands.] Quentin Verspieren [Ph.D. in public policy @ The University of Tokyo, Assistant Professor of Space Policy @UTokyo, General Manager, Global Strategy @ArkEdge Space Inc., Associate Research Fellow @ESPI] Goutham Karthikeyan [The University of Tokyo & Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (ISAS-JAXA)] 2018 https://www.researchgate.net/publication/328094878\_The\_Principle\_of\_Non-Appropriation\_and\_the\_Exclusive\_Use\_of\_LEO\_by\_Large\_Satellite\_Constellations SM

* LSC = large satellite constellations
* Outlines “L”SC thresholds

By investigating expected large satellite constellation projects and by reviewing existing interpretations of international space law, this paper argues that the exclusive use of specific LEO orbits by a large constellation of satellite could constitute a violation of the non-appropriation principle by means of occupation and by means of use, drawing a parallel between orbits as resources and the exploitation of tangible mineral resources in space. Based on this, the important question to be raised is what constitutes an exclusive use of a specific orbit. In other words, an important hurdle in the concrete evaluation of whether a planned or established constellation potentially violates the non-appropriation principle through an exclusive use of LEO resides in the lack of clear definition on what can be considered an exclusive use. While the authors claim that legal issue can be clearly solved in abstracto, it naturally shifts towards a regulatory challenge.

This regulatory challenge consists in first defining qualitatively what is the exclusive use of an orbit before translating this definition into measurable, technical rules. In this paper, the authors define an exclusive use of an orbit by a state40 as any use that would prevent/hinder the usage of the same orbit by any other state. Translating this definition into an applicable regulation could consist in defining a threshold of orbital collision risk or a threshold of density of satellites along an orbit based on its altitude, shape, relative velocity of neighbouring objects, etc. It is however not the purpose of this space law paper. What is more appropriate here is to think about which organization or forum would be in charge of elaborating this technical definition. Serious candidates could be the ITU, with excellent track-record in dealing with the use of the GEO region but which would have to review its “first come, first served” principle, or the UNCOPUOS, aiming for the widespread adoption of a new piece of international law. Moreover, even if its rules suffer from a low implementation rates, the IADC would be an appropriate discussion platform thanks to its very deep technical focus.

6. Conclusion

The various announced projects of LSC, also called mega-constellations, push existing regulations and practices to their limit, forcing researchers and practitioners around the world to rethink the applicability of existing space law principles to this new trend. In this paper, the authors, after providing background information on current LSC plans as well as recalling the legal status of the LEO region, investigate whether the deployment of an LSC having an exclusive use of an orbit constitutes a violation of the nonappropriation principle as stated in OST Article II. This paper concludes that:

♣ The exclusive use of an orbit by an LSC constitutes a violation of the non-appropriation principle by means of occupation due to the innate nature of orbit being a specific location in space that can be occupied, but most notably by means of use, considering orbits as “limited natural resources” and invoking parallels with the exploitation of natural resources in outer space;

♣ 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.

#### Privatization is driving uncontrolled satellite internet constellations that profit at the expense of cooperation and sustainability – perpetuates internet inequality.

Song and Bloom 20 “Big Tech is leading the new space race. Here's why that's a problem” Steve Song is a Fellow with the Mozilla Foundation where he works to promote policy and regulation that will increase equitable and affordable access to communication in rural and underserved regions of the world. Peter Bloom is a community digital defense activist and the founder and General Coordinator of Rhizomatica, an international non-profit that helps communities build their own communications infrastructure. He is a former Shuttleworth Foundation fellow and was named an Innovator under 35 by MIT Technology Review and appeared on Foreign Policy's 100 Leading Global Thinkers list in 2015. November 14, 2020 <https://www.salon.com/2020/11/14/big-tech-is-leading-the-new-space-race-heres-why-thats-a-problem/> SM

Big Tech is leading the new space race. Here's why that's a problem

New satellite tech could bring billions more online. But will Big Tech bring their extractive ethos into space?

The coronavirus pandemic has made having a stable and reliable internet connection a matter of extreme urgency, as people all over the world struggle to work, access education, and participate in society while staying safe. Yet universal affordable access is far from being achieved; indeed, half of the world still lacks access to the Internet, despite sustained efforts from governments and corporations.

One popular proposal for ubiquitous connectivity comes from Low Earth Orbit (LEO) satellite constellations. LEO boosters claims that such satellites will have the ability to deliver high-speed broadband anywhere on the planet. These satellites provide internet access from space, and require placing thousands of satellites into orbit at a much closer proximity to Earth than traditional satellites.

The prospect of a globe-encircling mesh of broadband communication satellites has attracted the interest and investment of billionaires ranging from Bill Gates in the 1990s to Elon Musk and Jeff Bezos today. Currently there are at least four major LEO initiatives from the US and Europe, including Starlink (SpaceX), Project Kuiper (Amazon), OneWeb, and Telesat. China has announced at least three LEO constellations, and Russia one. The size and scope of these projects are massive. To put current LEO satellite ambitions in context: the current total number of satellites of any kind orbiting Earth is just over 2,500. Starlink, who already have nearly 900 satellites in orbit, recently petitioned the US communications regulator for permission to launch a total of 12,000 satellites. Not to be outdone, OneWeb recently applied for permission to launch 48,000 satellites.

So what's not to love?

While the goal of these companies to ensure broadband anywhere and everywhere is laudable, the technology and the approach to connectivity are not free from concerns. Recent history, especially the development of the Internet itself, has shown us that simply having the capability to build something doesn't necessarily make it a good idea. The Silicon Valley ethos of "move fast and break things," perhaps valid in developing small applications, becomes irresponsible when the consequences of failure may be catastrophic and irreversible. Criticism of LEO constellations to date have focused on practical concerns around a variety of issues, including: the economic viability of the constellations, the occlusion of the night sky from astronomers, wireless interference between different constellations, and the potential chain reaction of collisions from a single error in satellite trajectory, leaving near-space an inaccessible junkyard of debris.

Beyond that, LEO constellations have deeper and longer-term implications that have yet to find their way into mainstream public debate. For one, LEO constellations are part of a larger process in which space exploration is being redefined and reframed in military and commercial terms. Closer to Earth, LEO constellations raise important concerns around the potential for the further entrenchment of a global internet oligopoly that increases inequality and disempowers citizens.

The scramble for space

Over the past seven decades, as our ability to explore beyond our planet has evolved, national security interests in space have aligned with commercial ones to an extent that they are nearly indistinguishable today. In the United States, private space launch companies like SpaceX and United Launch Alliance are major recipients of government contracts and now provide the bulk of US launch capacity for both scientific and military missions. While close ties between the defense and aerospace industries is nothing new, we are in a decidedly new phase of this relationship due to technological advancement, new policy priorities and the rise of private actors.

As commercial launch capacity has increased and space exploration technologies have advanced, the decades-old agreements around how we treat space and recognize our solar system as a commons for the benefit of all humanity are beginning to unravel. One clear example of this is the White House's recent "Executive Order on Encouraging International Support for the Recovery and Use of Space Resources," which emphasizes that "the United States does not view outer space as a 'global commons'" and refers to the Moon Agreement as "a failed attempt at constraining free enterprise."

It is necessary to better understand the deep ties of LEO companies to the hegemonic designs of national governments on near space. Recently, in exchange for $28 million USD, Starlink provided the services of its satellites for live-fire demos with the US Air Force to test its Advanced Battle Management System and lay the groundwork for a military Internet of Things. Speaking after the latest live-fire demo, William Roper, Air Force acquisition chief, opined that "the military needs to be ready to play a strategic role because we need communications in many areas of the world that there are no commercial providers . . . we can be the stability case for companies like SpaceX and others who want to sell communications worldwide."

SpaceX's connections to the military-industrial complex were made clear in comments by SpaceX president Gwynne Shotwell in 2018, who stated that her company would be willing to launch a space weapon to protect the US, in contravention of established space norms. Only weeks ago, SpaceX signed a contract with the Pentagon to jointly develop a rocket that can deliver up to 80 tons of cargo and weaponry anywhere in the world in just one hour.

The Internet, too, from its very inception until today, has proven to be a useful tool for pursuing military and security objectives. Of these, surveillance remains at the heart of Silicon Valley's highly profitable business model of manipulating our attention and preferences for the sake of profit. This profit model facilitates the designs of space-obsessed billionaires like Jeff Bezos who make it no secret that their ultimate goal and passion is the human colonization of other planets in our solar system. In general terms, with material and economic support from taxpayers through defense spending, the profits from the colonization of our data-bodies are being invested in the militarization, privatization and colonization of space.

Telecommunications: driving inequality or empowering citizens?

The telecommunications sector has always been a battleground for regulation. While the early days of the Internet seemingly teemed with competition and diversity, power and control has ultimately become concentrated with the growth of giant internet companies that now dominate our online life. The consequences of unregulated, technology-fueled expansion of globalization and inequality can now be seen in almost every aspect of life.

Digital technology plays a critical role in amplifying inequality, highlighting the need to reframe how we approach network technology development. Some governments and citizen groups understand the connection between economic mobility and tech skills development.

One great example of this comes from Broadband for the Rural North (B4RN), a cooperative in Northern England, that delivers 1 gigabit-per-second fiber-optic capacity to homes in a region deemed economically unviable by the incumbent telecommunications giant. B4RN's ability to build and sustain an affordable internet service at speeds many times that of commercial offerings is based upon the investment they make in both community engagement and the development of local capacity. Contrast this with the prospect of a broadband service from a LEO constellation, in which the role of the citizen is that of a consumer only. It is also worth noting that B4RN's profits are reinvested locally, while revenues from LEO constellations are beamed straight out of the country.

The failure to invest in alternatives that build local capacity replicates itself at the national level as well. LEO constellations have the potential to further abstract Internet service to a supra-national level in a manner that disempowers not just individuals but nation-states themselves in terms of domestic expertise and infrastructure. Investment and deployment costs for LEO constellations are so "astronomical," and in many cases so tied to national/military investment and subsidies, that only a small handful of corporations/countries will be capable of owning and managing their own constellation. This is likely to open up a new front in the ongoing wrangling by geo-political power blocs over the future of the Internet.

Furthermore, it is far from clear that LEO constellations have either the capacity or the economic model to deliver on their claims of providing affordable connectivity to the unserved in most parts of the world. Consider that the half of the world's population that remains unconnected to the Internet are the most economically disadvantaged. As such, most people will not be direct consumers of LEO services but will instead need to rely on a telco building infrastructure and using LEO as backhaul—a scenario which already exists with conventional satellite services. A further concern is that LEO constellations may ultimately create a disincentive to investment in rural connectivity, based on the assumption by service providers and governments that LEO constellations will address that gap.

It is troubling that companies like Amazon and Google (the third largest shareholder in SpaceX), which already wield tremendous power and influence over society, are vying to expand their dominance by becoming global internet service providers with support from taxpayers via subsidies and military spending. With their hands in essentially every layer of the communication stack, it will prove challenging to regulate or even know about the data they harvest and how those are used to competitive advantage in other areas of their businesses.

At the time of their emergence, both space exploration and the Internet served as beacons of hope and of potential transcendence for humanity—one of shared imagination and resources, and of cooperation in human development. In both cases, that hope has been dimmed in a quest for profit and geo-political power. If we want to recover a sense of shared purpose as a species, the question as to "who gets to put their satellites into low earth orbit?" is more important than we might think. Is space for everyone, or just a few huge corporations and global superpowers? This is the question we ask when we ask who gets to park their satellites in orbit.

There is an opportunity to return to the spirit of internationalism that infused the early days of space exploration in which space was held as a shared resource to be protected and guarded from exploitation. Similarly, here on Earth, we see successful efforts to manage Internet infrastructure as a commons in contrast to Silicon Valley's model of surveillance capitalism. Recognizing that individual and collective empowerment and agency are as important as the actual infrastructure itself is the key to a more egalitarian Internet. LEO satellite networks may deliver connectivity (although many doubts remain), but they are less likely to empower people and move us toward a more equitable world. The development of a healthy Internet that actually benefits humanity involves not just the end result of affordable access, but also the process through which people gain that access.

#### No broadband concerns - constellations couldn’t support more than 1 user for every 10 km2 – only useful in extremely remote areas.

Ogutu and Oughton 21 “A Techno-Economic Cost Framework for Satellite Networks Applied to Low Earth Orbit Constellations: Assessing Starlink, OneWeb and Kuiper” Osoro B. Ogutu and Edward J. Oughton [O. Ogutu is with the Department of Geography and Geoinformation Science, George Mason University; E. Oughton is an assistant professor with the Department of Geography and Geoinformation Science, George Mason University] August 2021 <https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=9568932> SM

At maximum network density, each Starlink satellite covers approximately 101,000 km2, OneWeb 708,000 km2 and Kuiper 157,000 km2. At a subscriber density of 0.05 users per km2, the corresponding number of subscribers per satellite for Starlink, OneWeb and Kuiper are 5,000, 35,400 and 7,900 respectively. Since the aggregate capacity is shared among the subscribers, Starlink provides the highest mean capacity followed by Kuiper and OneWeb as shown in Figure 4. Therefore, an increase in population density (and logically a higher subscriber density) leads to a drastic decrease in mean capacity.

We also plot the potential cost in Figure 5. The NPV for a single satellite asset over the study period was estimated at US$ 0.6 million, US$ 5.6 million, and US$ 3 million for Starlink, OneWeb and Kuiper, respectively. Thus, the NPV cost per user for each constellation can then be plotted, which logically reduces as each subscriber density increases. Starlink incurs the least cost per user over the study period (2020–2025) that ranges US$ 100-US$ 10 for the subscriber density range of 0.005–1.0 (km2). Kuiper records the largest cost per user ranging between US$ 400 and US$ 30 for the same subscriber density range. The important caveat to these estimates is that there would be a major impact on the capacity available for each subscriber at the maximum adoption rate, due to increased contention. Hence, active constellations such as Starlink have already begun limiting adoption in high demand areas, to ensure QoS can be guaranteed to existing customers, ensuring the available broadband services remain competitive against competing technologies.

Figure 3 illustrates population density globally by sub-national region for population deciles ranging from below 5 people per km2, to over 45 people per km2. These decile boundaries were selected because we know a priori that higher density areas will be less suitable for LEO broadband constellations, and that they will be focusing on the bottom 5% of the market not currently served by conventional terrestrial broadband services using either fixed or wireless technologies.

We can see large parts of Asia (India, China etc.) will be unsuitable, along with most of mainland Europe (e.g. Germany, Italy) and central America (e.g. Mexico). However, the constellations can choose to limit the number of subscribers in such regions to provide relatively higher speeds and ensure QoS. In the USA, the West and South West have large areas which could be suitable, along with much of Canada, Australia and New Zealand.

In South America large parts of the Amazon may also have low enough population density to be suitable, as well as much of the Sahara region in Africa, although whether incomes would enable the purchasing of such services would be a main concern.

Therefore, to explore the suitability of these constellations we use a 1% adoption rate among the local population to explore capacity per user in the busiest hour of the day. Generally, Starlink provides impressive capacity for remote regions with global coverage thanks to its high asset density. In regions with very low population density Starlink provides a mean of over 90 Mbps per user, such as in parts of Canada, the West and South West of the USA, Central and South America, Sahara Africa, South-west Africa, Australia, Russia and remote parts of Asia. Kuiper performs similarly, with only slightly reduced performance. However, OneWeb offers generally lower capacity per user, although still reaching impressive peak rates in areas with very low population density.

SECTION VII.Discussion

In this paper a generalizable techno-economic assessment model was developed for satellite broadband constellations. The approach was used to estimate the capacity and related costs for three LEO constellations, including Starlink, OneWeb and Kuiper. The open-source codebase is provided to help boost scientific reproducibility, as well as support other engineers or business analysts working in this research area. The method consisted of a mix of engineering simulation, cost estimation and Geographical Information System (GIS) techniques, combined to provide new insight into the per user capacity and cost. Such analytics are very useful to help narrow the broadband availability gap in rural and remote areas by providing geospatial insight on the suitability of these technologies. The results demonstrate the connectivity opportunities and constraints of different LEO systems, as well as their viability. This section now revisits the research questions posed in the introduction of the paper. The first research question was articulated as follows:

A. How Much Capacity can be Provided by Different LEO Broadband Constellations?

The findings support existing theory whereby the capacity provided by the constellation is a function of the number of satellites. Fewer satellites result in a larger coverage area and vice versa. Unlike GEO, a satellite located at LEO will also have a shorter path length. As more satellites are added into the constellation, the coverage area per satellite reduces. Furthermore, the instantaneous number of satellites available to a ground user increases. We find that for network densities of 5,040, 720 and 3,240 satellites for Starlink, OneWeb and Kuiper respectively, the estimated coverage areas equate to 101,000, 708,000 and 157,000 km2.

The variation in the FSPL due to the orbital altitude and network density among the three constellations results in different received power. To compensate for high path loss, Kuiper and OneWeb opt for high receiver antenna gain, transmitted power and diameter. In contrast, the ultra-dense network and low orbital altitude enables Starlink to maintain large minimum elevation angles for its users compared to the other three systems, leading to superior QoS. This explains the constellation’s Business-to-Consumer (B2C) approach as users can easily connect to its satellites with minimum engineering requirements. In contrast, the limited capacity demonstrated in this analysis for OneWeb suggests why a more enterprise-focused approach is being adopted to provide Business-to-Business (B2B) global connectivity services, ranging from cellular backhaul to logistics for emergency services redundancy.

B. What is the Potential Capacity Per User From Different Constellations?

Related to the previous question, the per user capacity is therefore also positively correlated with the increase in the number of satellites for each constellation. The highest mean user capacity is achieved with the lowest subscriber densities, which occur in the most rural and remote regions where network contention is at its lowest. For instance, with 1 user every 10 km2 (0.1 users per km2) the best performing constellation (Starlink) records a very modest mean per user capacity of 24.94 ± 0.72 Mbps. This is worse for Kuiper and OneWeb with 10.30 ± 0.25 Mbps and 1.01 ± 0.02 Mbps, respectively. Hence, this explains why LEO broadband providers have been making a strong business case for the usage of satellites in the final 3 percent of customers in the hardest-to-reach rural and remote regions of the USA, Canada, United Kingdom, Australia and New Zealand (among other countries) due to their competitive advantage in these challenging deployment situations. While the aggregate speeds estimated are impressive, each satellite asset can easily become saturated, especially in higher populated urban and suburban areas, meaning SNOs will have to strictly manage spatial adoption rates. There is no doubt that the potential speeds per user which could be provided are highly desirable (and indeed revolutionary) for users who have struggled to gain a decent broadband connection from traditional providers. The potential services available would be more than adequate to enable intensive applications such as High Definition (HD) video streaming without buffering (providing QoS was well managed).

C. What is the Potential Cost Per User as Subscriber Penetration Increases?

The largest capital expenditure costs are incurred by rocket launches, building ground stations and acquiring spectrum. As more satellites are launched, the cost per user would increase, partly due to the rising operating costs, but this would ensure a better QoS for each user terminal thanks to smaller coverage areas with fewer shared spectrum resources. With more satellites in each constellation, the ground station energy requirements, maintenance, continual engineering and staff costs increase. At a low subscriber density, high capacity per user is available but the cost could be prohibitively expensive for some. In contrast, at a high subscriber density, the cost of broadband connectivity services is much more affordable but there is a major trade-off in QoS, with only very modest speeds being delivered.

The results open a question on whether LEO constellations could break into the urban broadband market given that MNOs and other operators can offer the services at a lower cost per user. While acquiring a segment of the urban market cannot be ruled out, the possibility of succeeding in developed countries where constellations such as Starlink are testing their products is low (driven by the need to limit the number of active users). Consequently, LEO broadband systems are more likely to play a significant role in providing global communications for niche industrial activities which require substantial mobility with high reliability. For example, maritime, rail, aviation and integration into other supply chain IoT architectures, thanks to LEO pole-to-pole coverage. Furthermore, LEO systems might also have a useful niche in delay sensitive applications such as monitoring offshore solar and wind farms in smart grid applications, thanks to the lower latency they can achieve relative to other technologies such as GEO. Alternatively, LEO broadband constellations can present a viable cost-effective solution for developing countries with growing urban centers that are yet to enjoy decent cellular and fiber infrastructure availability. However, this very much depends on the necessary spectrum being allocated in appropriate bands by each telecommunications regulator.

D. Which Parts of the World are LEO Constellations Most Suitable for?

The performance of the three constellations in areas of different population density shows a general trend. Regions with low population density generally experience higher capacity per user with Starlink and Kuiper providing superior speeds.

The simulation of possible geographical areas of adoption indicates that most parts of Central Asia, Middle East, South East Asia, South America, Sub-Saharan Africa and Eastern Europe are less suitable for LEO constellations with quite low capacity provided (below 10 Mbps) using the modeling parameters explored.

These results are arrived at by only considering population density. Future research should recognize the roles of adoption factors such as disposable income, perceived relevance of the Internet, literacy and cellular network penetration, as these may affect the number of people who can actually afford to pay for broadband services.

SECTION VIII.Conclusion

Connecting the global population who are still unable to access a decent broadband service remains a key part of the United Nation’s Sustainable Development Goals (specifically Target 9.c).

Motivated by these developments, the framework applied in this paper introduces a techno-economic modeling approach for the integrated assessment of data capacity and investment cost per user by constellation. The model presents the engineering and economic simulation results using a single framework, unlike other approaches where this may be undertaken by two separate groups of professionals (engineers and business analysts). This theoretical model allows for estimation of the constellation capacity based on the known engineering parameters filed with local or global regulatory authorities such as Federal Communication Commission (FCC) and ITU. Using the information publicly available from such organizations, and estimation based on financial statements filed by publicly traded GEO, MEO and LEO broadband companies, the values can be imputed in the model to approximate the capacity and cost of delivering satellite Internet. The model has been tested for three different constellations with varying number of simulated satellites to derive the per user capacity and costs. The codebase for the model is fully open-source and available from the online repository, enabling anyone to access and further enhance the capability developed [71]. Future research could include addressing the issue of non-linearity in the multiple access of satellite resources, which would improve on existing simplifications. Moreover, as the modeling approach is generalizable for satellite constellations, the framework can be further adapted for other planned constellations, such as Telesat.

The results of the model reveal that at the 95% confidence level, mean aggregate capacity speeds of 11.72 ± 0.04 Gbps, 3.43 ± 0.01 Gbps and 7.53 ± 0.03 Gbps are achievable for Starlink, OneWeb and Kuiper, respectively. The current anticipation associated with the benefits of LEO broadband constellations is very high, but success will depend on maintaining relatively low spatial subscriber densities, preferably below 0.1 users per km2 (so less then 1 user per 10 km2), otherwise the services provided may offer little benefit against other terrestrial options. For example, the model has shown that at 0.1 users per km2, only a mean per user capacity of 24.94 ± 0.72 Mbps, 1.01 ± 0.02 Mbps and 10.30 ± 0.25 Mbps can be achieved by Starlink, OneWeb and Kuiper respectively in the busiest hour of the day.

### Adv – Collisions

#### Satellite internet constellations accelerate collision risks – more close encounters and less transparency means bad decisions are inevitable.

Pultarova 21 “SpaceX Starlink satellites responsible for over half of close encounters in orbit, scientist says” Tereza Pultarova [Master's in Science from the International Space University, France, to her Bachelor's in Journalism and Master's in Cultural Anthropology from Prague's Charles University. She worked as a reporter at the Engineering and Technology magazine, freelanced for a range of publications including Live Science, Space.com, Professional Engineering, Via Satellite and Space News and served as a maternity cover science editor at the European Space Agency.], August 18, 2021 <https://www.space.com/spacex-starlink-satellite-collision-alerts-on-the-rise> SM

SpaceX Starlink satellites responsible for over half of close encounters in orbit, scientist says

Starlink satellites might soon be involved in 90% of close encounters between two spacecraft in low Earth orbit.

Operators of satellite constellations are constantly forced to move their satellites because of encounters with other spacecraft and pieces of space junk. And, thanks to SpaceX's Starlink satellites, the number of such dangerous approaches will continue to grow, according to estimates based on available data.

SpaceX's Starlink satellites alone are involved in about 1,600 close encounters between two spacecraft every week, that's about 50 % of all such incidents, according to Hugh Lewis, the head of the Astronautics Research Group at the University of Southampton, U.K. These encounters include situations when two spacecraft pass within a distance of 0.6 miles (1 kilometer) from each other.

Lewis, Europe's leading expert on space debris, makes regular estimates of the situation in orbit based on data from the Socrates (Satellite Orbital Conjunction Reports Assessing Threatening Encounters in Space ) database. This tool, managed by Celestrack, provides information about satellite orbits and models their trajectories into the future to assess collision risk.

Lewis publishes regular updates on Twitter and has seen a worrying trend in the data that reflects the fast deployment of the Starlink constellation.

"I have looked at the data going back to May 2019 when Starlink was first launched to understand the burden of these megaconstellations," Lewis told Space.com. "Since then, the number of encounters picked up by the Socrates database has more than doubled and now we are in a situation where Starlink accounts for half of all encounters."

The current 1,600 close passes include those between two Starlink satellites. Excluding these encounters, Starlink satellites approach other operators’ spacecraft 500 times every week.

In comparison, Starlink's competitor OneWeb, currently flying over 250 satellites, is involved in 80 close passes with other operators' satellites every week, according to Lewis' data.

And the situation is bound to get worse. Only 1,700 satellites of an expected constellation of tens of thousands have been placed into orbit so far. Once SpaceX launches all 12,000 satellites of its first generation constellation, Starlink satellites of all close approaches, Lewis’ calculations suggest.will be involved in 90%

**Chart, line chart

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A graph showing the number of close encounters between Starlink satellites and spacecraft of other operators plotted by Professor Hugh Lewis based on data from the Socrates database.A graph showing the number of close encounters between Starlink satellites and spacecraft of other operators plotted by Professor Hugh Lewis based on data from the Socrates database. (Image credit: Hugh Lewis)

The risk of collision

Siemak Hesar, CEO and co-founder of Boulder, Colorado, based Kayhan Space, confirms the trend. His company, which develops a commercial autonomous space traffic management system, estimates that on average, an operator managing about 50 satellites will receive up to 300 official conjunction alerts a week. These alerts include encounters with other satellites as well as pieces of debris. Out of these 300 alerts, up to ten might require operators to perform avoidance maneuvers, Hesar told Space.com.

Kayhan Space bases their estimates on data provided by the U.S. Space Surveillance Network. This network of radars and telescopes, managed by the U.S. Space Force, closely monitors about 30,000 live and defunct satellites and pieces of debris down to the size of 4 inches (10 centimeters) and provides the most accurate location data of the orbiting objects.

The size of this catalog is expected to increase ten times in the near future, Hesar added, partly due to the growth of megaconstellations, such as Starlink, and partly as sensors improve and enable detection of even smaller objects. The more objects in the catalog mean more dangerously close encounters.

"This problem is really getting out of control," Hesar said. "The processes that are currently in place are very manual, not scalable, and there is not enough information sharing between parties that might be affected if a collision happens."

Hesar compared the problem to driving on a highway and not knowing that there has been an accident a few miles ahead of you. If two spacecraft collide in orbit, the cloud of debris the crash generates would threaten other satellites travelling through the same area.

"You want to have that situational awareness for the other actors that are flying in the neighbourhood," Hesar said.

Bad decisions

Despite the concerns, only three confirmed orbital collisions have happened so far. Earlier this week, astrophysicist and satellite tracker Jonathan McDowell, who's based at the Harvard-Smithsonian Center for Astrophysics in Cambridge, Massachusetts, found evidence in Space-Track data that the Chinese meteorological satellite Yunhai 1-02, which disintegrated in March this year, was actually hit by a piece of space debris.

The worst known space collision in history took place in February 2009 when the U.S. telecommunication satellite Iridium 33 and Russia's defunct military satellite Kosmos-2251 crashed at the altitude of 490 miles (789 kilometres). The incident spawned over 1,000 pieces of debris larger than 4 inches (10 cm). Many of these fragments were then involved in further orbital incidents.

Lewis is concerned that with the number of close passes growing, the risk of operators at some point making a wrong decision will grow as well. Avoidance maneuvers cost fuel, time and effort. Operators, therefore, always carefully evaluate such risks. A decision not to make an avoidance maneuver following an alert, such as that made by Iridium in 2009, could, however, clutter the orbital environment for years and decades.

"In a situation when you are receiving alerts on a daily basis, you can't maneuver for everything," Lewis said. "The maneuvers use propellant, the satellite cannot provide service. So there must be some threshold. But that means you are accepting a certain amount of risk. The problem is that at some point, you are likely to make a wrong decision."

Hesar said that uncertainties in the positions of satellites and pieces of debris are still considerable. In case of operational satellites, the error could be up to 330 feet (100 meters) large. When it comes to a piece of debris, the uncertainty about its exact position might be in the order of a mile or more.

"This object can be anywhere in this bubble of multiple kilometres," Hesar said. "At this point, and for the foreseeable future, avoidance is our best recourse. People that say 'I'm going to take the risk', in my humble opinion, that's an irresponsible thing to do."

Starlink monopoly

Lewis is concerned about the growing influence of a single actor — Starlink — on the safety of orbital operations. Especially, he says, as the spaceflight company has entered the satellite operations world only recently.

"We place trust in a single company, to do the right thing," Lewis said. "We are in a situation where most of the maneuvers we see will involve Starlink. They were a launch provider before, now they are the world's biggest satellite operator, but they have only been doing that for two years so there is a certain amount of inexperience."

SpaceX relies on an autonomous collision avoidance system to keep its fleet away from other spacecraft. That, however, could sometimes introduce further problems. The automatic orbital adjustments change the forecasted trajectory and therefore make collision predictions more complicated, according to Lewis.

"Starlink doesn't publicize all the maneuvers that they're making, but it is believed that they are making a lot of small corrections and adjustments all the time," Lewis said. "But that causes problems for everybody else because no one knows where the satellite is going to be and what it is going to do in the next few days."

#### LEO collisions due to constellations take out ISR and other military assets – debris cascades into different altitudes and triggers Kessler Syndrome.

Wong 19 “Congested Outer Space: Increased Deployment of Small Satellite Constellations Could Hamper Military Space Operations” 2019 Arthur Wong [Strategic Development of Forces Division, SHAPE. Prior to working at SHAPE he has worked at NATO HQ, within the Defence Investment Division on interoperability for NATO’s multinational battlegroups.] <https://www.japcc.org/congested-outer-space/> SM

Since the production of a large number of small satellites in a factory environment will lower the cost of the overall programme, companies such as SpaceX, Amazon and OneWeb have been creating a satellite constellation within the LEO and Medium Earth Orbit (MEO).8, 9 OneWeb is a new company which plans to create an initial constellation of 648 satellites to provide global satellite internet broadband services. Each satellite weighs approximately 150 kg and will be programmed to operate in 20 different orbital planes at an altitude of 1,200 km.10 Creating a large constellation within the LEO could mitigate transmission delays and latency due to their closer range to ground stations while allowing users to send and receive data in a timely manner. The first six of the 648 satellites were launched in early 2019 with more launches scheduled to occur throughout this year.

Both SpaceX and Amazon have also announced their intention of creating a separate constellation for internet communication systems. SpaceX satellite constellations, named Starlink, will be the largest constellation ever built when it is completed. The constellations consist of nearly 12,000 satellites in more than 20 different orbital planes.11 The altitude of Starlink will range between 550 km to 1,150 km. SpaceX aims to have a minimum of 2,200 satellites in the next five years and achieve initial commercial operation by 2020.12 Amazon’s version of constellation, named Kuiper, has also been seeking approval from the Federal Communications Commission (FCC) to launch more than 3,200 satellites between 590 km to 630 km in the LEO.13

Space Debris Threat Increases in the LEO

The usage of cube satellite has provided positive impacts in various fields, ranging from environmental studies to offering worldwide internet access in rural areas through communication constellations. However, the current space environment is becoming congested. Hundreds of satellites have already been scheduled to launch each year before the construction of the constellation programme by OneWeb, SpaceX and Amazon. To further worsen the space debris situation in the LEO, direct-ascent Anti-Satellite Testing (ASAT) was conducted in recent years and more debris will be created through such testing. During the Chinese ASAT in 2007, some debris from the collision was blasted outward away from the Earth, causing a potential threat to satellites above the altitude where the ASAT testing occurred.14 Nine years after the incident happened, there are still more than 3,000 traceable pieces in orbit.

In 2009, two satellites collided at a speed of 10 km/s at an altitude of 800 km. This was the first time a collision had happened between two satellites. The incident created more than 1,000 pieces of debris larger than 10 cm. Such activity could initiate a chain reaction, creating more collisions from the initial impact. This phenomenon is known as the Kessler Syndrome.15

From early 2019, there were approximately 34,000 pieces of debris larger than 10 cm (similar to the size of a cube satellite) and more than 900,000 pieces of debris ranging from one cm to 10 cm in size. Objects that are smaller than one cm in size are expected to be more than 100 million within the LEO.16 Despite the small size of the space debris, they are travelling at a speed of more than seven km/s. At this speed, tiny objects could harm any large satellite orbiting in the LEO. While satellites can increase their physical hardening to protect the on-board instruments from impact, some satellites cannot be hardened due to the size and dimensional constraints. Furthermore, hardened materials would also increase the overall cost of the satellite.

Constellation in the Making Could Impact Space-Based Military Assets

The previous examples revealed the congestion of the LEO. With companies continuing to launch thousands of small satellites, the chances of a collision in space will continue to increase. This will hinder space-based Intelligence, Surveillance and Reconnaissance (ISR) support to provide valuable information to military operations. A majority of the ISR assets are orbiting in the LEO. NATO relies on space-based assets to assist its operations. Increasing the number of spacecraft in the LEO could raise problems and threats to military assets as well as access to space assets to support operations. If the orbital path of these smaller objects were not tracked by the Space Operation Centre regularly, larger satellites or manned-space stations could be penetrated by the non-propulsion satellites, making them a potential kinetic kill vehicle.

Most satellites within the 600 km region of the LEO are affected by the atmospheric drag, which is helping to bring down some of the obsolete satellites. However, satellites orbiting above 800 km are less likely to be affected by the atmospheric drag, making cube satellites or small satellites without propulsion systems difficult to deorbit once they have reached the EOL.17, 18 The altitude for some of the OneWeb, Starlink and Kuiper constellations is planned to be above the atmospheric drag region. Despite this, Starlink satellites will have propulsion system for orbital manoeuvre and EOL deorbiting, tracking the full constellation with 12,000 satellites could be challenging for the company and the Combined Space Operations Center (CSpOC).19 Additionally, there is the possibility of losing contact with satellites before they reach their EOL. Envisat, an 8,210 kg satellite that is currently drifting at an altitude of 785 km, poses a collision threat with other satellites. Envisat was expected to decommission in 2014 but the European Space Agency (ESA) lost contact with the satellite in 2012.20 If no interaction will be made with the Envisat, it is expected to stay in orbit for the next 150 years.21

#### Collisions with early warning satellites causes miscalc and goes nuclear – magnified by the Kessler effect

Blatt 20 [Talia, joint concentration in Social Studies and Integrative Biology at Harvard, specialization in East Asian geopolitics and security issues] “Anti-Satellite Weapons and the Emerging Space Arms Race,” Harvard International Review, May 26, 2020, <https://hir.harvard.edu/anti-satellite-weapons-and-the-emerging-space-arms-race/> TG

Despite their deterrent functions, ASATs are more likely to provoke or exacerbate conflicts than dampen them, especially given the risk they [pose](https://thebulletin.org/2019/06/arms-control-in-outer-space-the-russian-angle-and-a-possible-way-forward/) to early warning satellites. These satellites are a crucial element of US ballistic missile defense, capable of [detecting missiles](https://www.globalsecurity.org/space/world/japan/warning.htm) immediately after launch and tracking their paths.

Suppose a US early warning satellite goes dark, or is shut down. Going dark could signal a glitch, but in a world in which other countries have ASATs, it could also signal the beginning of an attack. Without early warning satellites, the United States is much more susceptible to nuclear missiles. Given the strategy of counterforcing—[targeting](https://www.belfercenter.org/sites/default/files/files/publication/isec_a_00273_LieberPress.pdf) nuclear silos rather than populous cities to prevent a nuclear counterattack—the Americans might believe their nuclear weapons are imminently at risk. It could be [twelve hours](https://books.google.com/books?id=ET8lDwAAQBAJ&pg=PA1&lpg=PA1&dq=%22Protecting+Space+Assets%22+johnson-freese&source=bl&ots=6Oq0IdeBjw&sig=ACfU3U1G6Hj8QdP4JlCRNxA6i5XplZwHyg&hl=en&sa=X&ved=2ahUKEwj1n-jT2YzpAhUugnIEHUuMCu4Q6AEwA3oECAkQAQ#v=onepage&q=%22Protecting%20Space%20Assets%22%20johnson-freese&f=false) before the United States regains satellite function, which is too long to wait to put together a nuclear counterattack. The United States, therefore, might move to mobilize a nuclear attack against Russia or China over what might just be a piece of debris shutting off a satellite.

Additionally, accidental warfare, or strategic miscalculation, is uniquely likely in space. It is [much easier](https://books.google.com/books?id=VyXTDwAAQBAJ&pg=PA339&lpg=PA339&dq=space+offense+dominant&source=bl&ots=Mw0bgJ51qf&sig=ACfU3U3DeZiEHpr9nfszlCbJZIoyyssIpg&hl=en&sa=X&ved=2ahUKEwjrs-WD3IzpAhVulHIEHbL0AE4Q6AEwCXoECAoQAQ#v=onepage&q=space%20offense%20dominant&f=false) to hold an adversary’s space systems in jeopardy with destructive ASATs than it is to [sustainably defend](https://www.cnas.org/publications/commentary/the-us-military-should-not-be-doubling-down-on-space) a system, which is expensive and in some cases not technologically feasible because of limitations on satellite movement. Space is therefore [considered](https://books.google.com/books?id=VyXTDwAAQBAJ&pg=PA339&lpg=PA339&dq=space+offense+dominant&source=bl&ots=Mw0bgJ51qf&sig=ACfU3U3DeZiEHpr9nfszlCbJZIoyyssIpg&hl=en&sa=X&ved=2ahUKEwjrs-WD3IzpAhVulHIEHbL0AE4Q6AEwCXoECAoQAQ#v=onepage&q=space%20offense%20dominant&f=false) offense-dominant; offensive tactics like weapons development are prioritized over defensive measures, such as [improving GPS](https://www.politico.com/story/2018/04/06/outer-space-war-defense-russia-china-463067) or making satellites more resistant to jamming.

As a result, countries are left with poorly defended space systems and rely on offensive posturing, which increases the risk that their actions are perceived as aggressive and incentivizes rapid, risky counterattacks because militaries cannot rely on their spaced-based systems after first strikes.

There are several hotspots in which ASATs and offensive-dominant systems are particularly relevant. Early warning satellites [play](https://www.politico.com/story/2018/04/06/outer-space-war-defense-russia-china-463067) a central role in US readiness in the event of a conflict involving North Korea. News of North Korean missile launches comes from these satellites. Given North Korea’s [history](https://www.bbc.com/news/world-asia-pacific-11813699) of nuclear provocations, unflinchingly hostile rhetoric towards the United States and South Korea, and diplomatic opacity, North Korea is always a threatening, unknowable adversary, but recent developments have magnified the risk. With the health of Kim Jong-un [potentially in jeopardy](https://apnews.com/f5d302ae65b03838173e40848223b771), a succession battle or even civil war on the peninsula [raises the chances](https://www.express.co.uk/news/world/1273890/Kim-Jong-un-dead-North-Korea-nuclear-weapon-news-latest-death-US) of loose nukes. If the regime is terminal, traditional MAD risk calculus will become moot; with nothing to lose, North Korea would have no reason to hold back its nuclear arsenal. Or China [might decide](https://foreignpolicy.com/2020/04/28/kim-jong-un-china-north-korea/) to seize military assets and infrastructure of the regime. If the US does not have its early warning satellites because they have been taken out in an ASAT attack, the US, South Korea, and Japan are all in imminent nuclear peril, while China could be in a position to fundamentally reshape East Asian geopolitics.

The South China Sea is another hotspot in which ASATs could risk escalation. China [is developing](https://missiledefenseadvocacy.org/missile-threat-and-proliferation/todays-missile-threat/china-anti-access-area-denial-coming-soon/) Anti-Access Area Denial (A2/AD) in the South China Sea, a combination of long range radar with air and maritime defense meant to deny US freedom of navigation in the region. Given the disputed nature of territory in the South China Sea, the United States and its allies do not want China to successfully close off the region.

### 7

#### Prefer the standard –

#### [1] The existence of extrinsic goodness requires unconditional human worth – when someone makes a decision, they presuppose the goodness of that action. However, the source of that goodness cannot be temporal desires because those are conditional – thus, the rational will must be the unconditional source of value – we must treat others as ends in themselves because all agents can create value.

#### [2] Performativity—freedom is the key to the process of justification of arguments. Willing that we should abide by their ethical theory presupposes that we own ourselves in the first place. Thus, it is logically incoherent to justify a standard without first willing that we can pursue ends free from others.

#### [3] Regress – other theories result in a regress—they generate requirements conditional on some further principle, which must itself be derived. The AC framework escapes this because it is derivable from the concept of an unconditional law in general.

#### [4] Self-ownership is the only conceptually coherent principle – either a group owns others which is repugnant or everyone owns everyone which is infinitely regressive because to act requires permission but the act of giving permission requires permission.

#### Property is bad

#### Multiple condo affs good

#### -extemp

#### 1] strat skew

#### 2] real world ed

#### 3] pluralism

#### 4] real world ed

#### 5] clash

#### 6] limit testing