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#### The shift to digital labor has forced the subject to become overwhelmed by the speed of process and unattuned to its environment. This is the thesis of semiocapitalism- information overload causes exhaustion and apathy

Berardi, Franco. “Cognitarian Subjectivation.” E-Flux.com, November 2010, [www.e-flux.com/journal/20/67633/cognitarian-subjectivation/](http://www.e-flux.com/journal/20/67633/cognitarian-subjectivation/) |Harun|

Recent years have witnessed a new techno-social framework of contemporary subjectivation. And I would like to ask whether a process of autonomous, collective self-definition is possible in the present age. The concept of “general intellect” associated with Italian post-operaist thought in the 1990s (Paolo Virno, Maurizio Lazzarato, Christian Marazzi) emphasizes the interaction between labor and language: social labor is the endless recombination of myriad fragments producing, elaborating, distributing, and decoding signs and informational units of all kinds. Every semiotic segment produced by the information worker must meet and match innumerable other semiotic segments in order to form the combinatory frame of the info-commodity, semiocapital. Semiocapital puts neuro-psychic energies to work, submitting them to mechanistic speed, compelling cognitive activity to follow the rhythm of networked productivity. As a result, the emotional sphere linked with cognition is stressed to its limit. Cyberspace overloads cybertime, because cyberspace is an unbounded sphere whose speed can accelerate without limits, while cybertime (the organic time of attention, memory, imagination) cannot be sped up beyond a certain point—or it cracks. And it actually is cracking, collapsing under the stress of hyper-productivity. An epidemic of panic and depression is now spreading throughout the circuits of the social brain. The current crisis in the global economy has much to do with this nervous breakdown. Marx spoke of overproduction, meaning the excess of available goods that could not be absorbed by the social market. But today it is the social brain that is assaulted by an overwhelming supply of attention-demanding goods. The social factory has become the factory of unhappiness: the assembly line of networked production is directly exploiting the emotional energy of the cognitive class. I wish to pinpoint the problem of organic limits, which is often eclipsed by an emphasis on the limitless potential of technology. We should speak of technology in context, and the present context of technology is culturally oriented towards economic competition. Info-producers are neuro-workers. Their nervous systems act as active receiving terminals. They are sensitive to semiotic activation throughout the entire day. What emotional, psychic, existential price does the constant cognitive stress of permanent cognitive electrocution exact? The acceleration of network technologies, the general condition of precariousness, and the dependence on cognitive labor all induce pathological effects in the social mind, saturating attention time, compressing the sphere of emotion and sensitivity, as is shown by psychiatrists who have observed a steep increase in manic depression and suicide in the last generation of workers. The colonization of time has been a fundamental issue in the modern history of capitalist development: the anthropological mutation that capitalism produced in the human mind and in daily life has, above all, transformed the perception of time. But we are now leaping into the unknown—digital technologies have enabled absolute acceleration, and the short-circuiting of attention time. As info-workers are exposed to a growing mass of stimuli that cannot be dealt with according to the intensive modalities of pleasure and knowledge, acceleration leads to an impoverishment of experience. More information, less meaning. More information, less pleasure. Sensibility is activated in time. Sensuality is slow. Deep, intense elaboration becomes impossible when the stimulus is too fast. A process of desensitization is underway at the point where electronic cyberspace intersects with organic cybertime. The prospect of individual subjectivation, and of social subjectivation, has to be reframed in this context, and a series of radical questions arise: Is it still possible to envisage a process of collective subjectivation and social solidarity? Is it still possible to imagine a “movement” in the sense of a collective process of intellectual and political transformation of reality? Is it still possible to forge social autonomy from capitalist dominance in the psycho-economic framework of semiocapitalism? Dismantling General Intellect The refusal of work—which is better defined as a refusal of the alienation and exploitation of living time—has been the main engine of innovation, of technological development and knowledge. The organic composition of capital (as a relationship between dead labor and living labor) progressively changed throughout the twentieth century as the workers’ resistance, their sabotage and insubordination, forced capitalists to hire engineers to replace human labor with machines. Similarly, the intellectualization of human activity is—from any perspective—a consequence of the workers’ insubordination and resistance to exploitation. When the cost of labor increases (as happened in the 1960s and ’70s), the capitalist replaces worker with machine, as the machine is less costly in the long run. Since the massive wave of industrial workers’ resistance, information technology has helped to replace human toil with intelligent machines, and this has provoked the enhancement of the sphere of intellectual labor and cognitive activity linked to value production. The ’90s were a decade of alliances: cognitive labor and venture capital met and merged in the dot-com. Expectations were high, judging by the amount of investment, and creativity became an inherent feature of social labor. Then, after the dot-com bubble burst in spring of 2000, neoliberalism broke the alliance of cognitive labor and venture capital. Using technology itself, neoliberalism managed to subvert the social and political rapport de force between labor and capital. As far as we can see now, the result of neoliberal politics is a general reduction of labor cost and an impoverishment of the cognitarians. Both industrial labor, delocalized to the peripheral areas of the world, and cognitive labor, are devalued and underpaid, as precarization has fragmented and finally destroyed social solidarity. In this new context, defined by precarization of cognitive labor, we must rethink the question of subjectivation. Just after the financial collapse of spring 2000, the dot-com crash and the crumbling of big corporations like Enron and WorldCom, the Swiss philosopher and economist Christian Marazzi, a sharp analyst of the social implications of financial crises, wrote an article on the danger of privatizing the general intellect, in which he predicted the trend that ten years later is in full swing: the reduction of research financing, the manipulation and militarization of state-financed research, and the impoverishment and precarization of cognitive labor. If we look at the politics of the European neoliberal ruling class, we see that they are doing exactly this: in some countries (such as Italy) they are reducing the financing for school and for research, privatizing public schools, and provoking a large-scale de-scholarization that has already begun showing signs of producing widespread ignorance and fanaticism. In some countries (like France), they increasingly limit the public financing of research to that which can immediately translate into the politics of economic growth. Subjugating research to immediate economic interests reduces the role of research, rendering it a mere tool for governance, for the repetition of an existing framework of social activity. As cognitive workers are forced into precarity, they are also denied the possibility of deciding the scope of their own research. This obviously reduces the creativity invested by cognitarians in their work, as well as the pace of innovation and progress in technology. In the long run, this trend obliterates the progressive features of capitalism. As the cost of labor becomes so low that exploiting the physical force of a worker costs less than looking for some technological replacement, the push toward innovation slows to a halt. The interest in immediate profit prevails over the long-term development of productive force. Notwithstanding the shortsighted opinions prevailing in the field of neoliberal economics, a decrease in labor cost suggest that the progressive impulse of capitalism is fading; capitalism becomes a factor of de-civilization, of intellectual and technological regression. Cognitarians Searching for a Body Cognitarians are those who embody the general intellect in its many forms: they process information in order to give birth to goods and services. As the cognitive function of society is inscribed in the process of capital valorization, the infinitely fragmented mosaic of cognitive activity becomes a fluid process within a universal telematic network, redefining the shape of labor and capital. Capital becomes the generalized semiotic flux that runs through the veins of the global economy, while labor becomes the constant activation of the intelligence of countless semiotic agents linked to one another. Cognitarians are the social body of the soul at work in the sphere of semiocapital, but this body is dimidiated in a sphere isolated from the other’s body. The form of alienation that is spreading in the living sphere of the cognitarians is a form of psychic suffering that escapes the Freudian definition of neurosis. If Freud’s definition of neurosis lingered on repression of desire, semiocapital is pushing demand for consumerist hyper-expression: just do it. Panic, depression, and a de-activation of empathy—it is here that we find the cognitariat’s problem. Precarious cognitive workers are forced to think in terms of competition. You can become friends with another person on Facebook, but genuine friendship is difficult under conditions of virtual isolation and intense economic competition. If we want to find the way towards autonomous collective subjectivation we have to generate cognitarian awareness with regard to an erotic, social body of the general intellect. The way to autonomous and collective subjectivation starts here: from the general intellect searching for a body. Our main political task must be handled with the conceptual tools of psychotherapy, and the language of poetry—much more than the language of politics and the conceptual tools of modern political science. The political organizer of cognitarians must be able to do away with panic and depression, to speak in a way that sensibly enacts a paradigm shift, a resemiotization of the social field, a change in social expectations and self-perception. We are forced to acknowledge that we do have a body, a social and a physical body, a socioeconomic body. Cyber-optimists were fashionable in the ’90s, and they were able to interpret the spirit of an alliance between venture capitalists and artists or engineers. But the alliance was broken in the Bush years, when technology was submitted to the laws of war, and financial capitalism provoked a collapse that may still lead to the destruction of modern civilization. Today, cyber-optimism sounds fake, like advertising for a rotten product. In his recent book, You Are Not a Gadget, Jaron Lanier, the same person who engineered the tools of virtual reality, writes: true believers in the hive mind seem to think that no number of layers of abstraction in a financial system can dull the efficacy of the system. According to the new ideology, which is a blending of cyber-cloud and neo–Milton Friedman economics, the market will not only do its best, it will do better the less people understand it. I disagree. The financial crisis brought about by the U.S. mortgage meltdown of 2008 was a case of too many people believing in the cloud too much. Governance and Cognitive Subjugation In the present, agonizing phase of neoliberalism (an agony that is more ferocious and destructive than the previous phases) European governments are staging an assault on the educational system—and particularly on scientific research—as a part of a war against cognitive labor, a war aimed at its subjugation. The university system across Europe is based on a huge amount of precarious, underpaid, or unpaid labor. Researchers and students have staged protests against this trend, attempting to return the educational system to its original vocation: a place of non-dogmatic knowledge, of the public sharing of culture. Research should not be subjected to any restraining criterion of functionality, because its very function is to explore solutions that, although dysfunctional in the present paradigm, may reveal new paradigmatic landscapes. This is the role of scientific research, especially when we are facing conundrums that seem unresolvable within the capitalist paradigm. The European ruling class aims to reduce research to a method for the governance of complexity. The ideology of governance is based on the naturalization (hypostatization, I would say in Hegelian parlance) of economic reasoning. The economy has achieved the status of a universal language, of the ultimate standard of choice, whereas economics should be just a branch of knowledge among others. The normative role that the economy has acquired is unwarranted from an epistemological point of view, and devastating at the social level. If research is subjected to economic conceptualization, it is no longer research, but technical management. The so-called reform of the European educational system launched in 1999 (the year of the Bologna Charter) is aimed at the separation of applied research from the questioning of the very foundations and finalities of scientific knowledge, accompanied by the subjugation of research to standards set by economic evaluation. The epistemic implications of this move are enormous: to submit research to the laws of economic growth obliterates the most important purpose of knowledge, what Thomas Kuhn calls its “paradigmatic” function. The ability to produce paradigm shifts in the field of knowledge and in the field of experimentation depends on the autonomy of research from established standards of evaluation. Only when research can work and discover and create concepts regardless of established social interests can knowledge move beyond repetition, and open new prospects to imagination and technology. “Governance” is the keyword for this process. Governance produces pure functionality without meaning, the automation of thought and of will. It embeds abstract connections in the relation between living organisms, technologically subjecting choices to logical concatenation. It recombines compatible (compatibilized) fragments of knowledge. Governance is the replacement of political will with a system of automatic technicalities forcing reality into a logical framework that cannot be questioned. Financial stability, competitiveness, labor cost reduction, increase of productivity: the systemic architecture of EU rule is based on such dogmatic foundations that cannot be challenged or discussed, because they are embedded in the technical function of managerial subsystems. No enunciation or action is operational if it does not comply with embedded rules of techno-linguistic dispositifs of daily exchange. Governance is the management of a system that is too complex to be governed. The word “government” means the understanding (as a reduction to a rational model) of the social world, and the ability of the human will (despotic, democratic, and so forth) to control a flow of information sufficient for the control of a relevant part of the social whole. The possibility of government requires a low degree of complexity with regard to social information. Information complexity grew throughout the late modern age, and exploded in the age of the digital network. Therefore, the reduction of social information to comprehensive knowledge and political control becomes an impossible task: control becomes aleatory, uncertain, almost impossible, and an increasing number of events escape the organized will. At this point, capitalism shifts to the mode of governance. It employs abstract concatenation of technological functions in place of the conscious processing of a flow of information. It connects asignifying segments in place of dialogic elaboration. It automatically adapts in place of forming consensus, using technical language in place of shared meaning resulting from dialogue and conflict. In place of planning, it manages disruption. It assesses the compatibility of agents entering the social game in place of mediating conflicting political interests and projects. And it employs the rhetoric of systemic complexity in place of a rhetoric of historical dialectics. Looking for Autonomy As the governance model functions perfectly, in itself, it destroys the social body. Conceptualizing the field of cybernetics, Norbert Wiener argued that a system exhibiting positive feedback, in response to perturbation, increases the magnitude of perturbation. In contrast, a system that responds to a perturbation in a way that reduces its effect is said to exhibit negative feedback. A logic of positive feedback is installed in the connection between digital technology and financial economy, because this connection tends to induce technological automatisms, and psycho-automatisms too, leading to the advancement of destructive tendencies. Look at the discourse of the European political class (almost without exception): If deregulation produced the systemic collapse with which the global economy is now confronted, we need more deregulation. If lower taxation on high incomes led to a fall in demand, let’s lower high-income taxation. If hyper-exploitation resulted in the overproduction of unsold and useless cars, let’s intensify car production. Are these people insane? I don’t think so. I think they are incapable of thinking in terms of the future; they are panicking, terrorized by their own impotence; they are scared. The modern bourgeoisie was a strongly territorialized class, linked to material assets; it could not exist without a relationship to territory and community. The financial class that dominates the contemporary scene has no attachment to either territory or material production, because its power and wealth are founded on the perfect abstraction of a digitally multiplied finance. And this digital-financial hyper-abstraction is liquidating the living body of the planet, and the social body. Only the social force of the general intellect can reset the machine and initiate a paradigm shift, but this presupposes the autonomy of the general intellect, the social solidarity of cognitarians. It presupposes a process of autonomous subjectivation of collective intelligence.

#### Their appeals to existential risk to justify the control of space is false and a tool of semiocapitalist accumulation and control – rather, we must rethink the way we understand value and the economy.

Heffernan 19, Teresa. (2019). Cyborg Futures Cross-disciplinary Perspectives on Artificial Intelligence and Robotics: Cross-disciplinary Perspectives on Artificial Intelligence and Robotics. 10.1007/978-3-030-21836-2. |Harun|

With that problem out of the way, Bostrom’s quandary of anthropomorphic projection comes into sharper focus. For, prima facie, to correlate the behavior of machines with Hobbesianstyle descriptions of utility-maximizing agents is to animate “things” with the characteristics that defined “human” personality in the utilitarian model from the start. In this anthropological sense of fetishism, Bostrom is indeed guilty of assigning to a thing the social value implicit in the meaning of homo oeconomicus (see Ellen 1988). But the quandary of projection is more complicated than it appears here. For, as I showed in the previous section, “living” individuals in capitalist society function as incarnations of homo oeconomicus. “Economic man” names the “supraindividual” objective essence that is projected onto concrete individuals and internalized as their own abstract-value producing identity and social function (Backhaus 1992, 57). Thus, Bostrom’s analysis presupposes homo oeconomicus as the collectively imposed character of individual subjectivity. It is the imposition of this character on individuals, the heteronomy of, and domination by, the exchange principle, that is revealed in Bostrom’s anthropomorphic gesture. By attributing the imposition of homo oeconomicus to the rogue AI supercomputer rather than to the social relations of exchange, what is human about homo oeconomicus is disavowed and rhetorically configured in inhuman terms. Human threats to “human interests” are thereby personified as dangers posed by the alien other. Hence, Bostrom’s rogue AI supercomputer amounts to an overtly negative, inverted image of capital accumulation, a representation of the “automatic subject” as driven by motivations that are not simply inhuman but antihuman. This “supraindividual” subject appears in the tale of the first fully autonomous AI aiming to become master of the universe, a hegemon whose rule will seem like an inescapable “natural law,” like the law of gravity, to those subject to it.8 And yet, a further clarification is needed of this symptomatic reading of Bostrom’s rogue superintelligence, because Bostrom does not discuss capitalism. The arc of his existential risk narrative concerns the threat of a machine seizing control of the means of production. Capitalist motivations are thereby occulted; they are hidden from view by virtue of the occlusion of the relations of production and the principle of exchange. The machine is driven to produce surplus value through the exploitation of labor power and colonial expansion, but it is K. ASP 81 not clear why. The answer resides in the “realm” of exchange where abstract value is realized, but that realm is not explicated in Bostrom’s text. Instead, he repeats the distortions characteristic of the “industrial society” thesis that Adorno (2003) warned against. Technology, Adorno advised, is an element of the social production process rather than its defining principle. Bostrom not only overdetermines the role of technology, he compounds that distortion by deflecting responsibility for the automation crisis from the social collective to the computing machines that are fabricated by it. Saving Transcendent Intelligence, Abandoning Earth The late Stephen Hawking articulated a sense of collective responsibility for the impacts of “technological society,” not only with reference to rogue AI systems, but also when he claimed later on, We have given our planet the disastrous gift of climate change … When we have reached similar crises there has usually been somewhere else to colonize … But there is no new world, no utopia around the corner…. We are running out of space, and the only places to go to are other worlds. (Hawking cited in Barclay 2017) Yet, rather than ponder how the effects of the “disastrous gift” to our planet might be treated, he implied that, since “we” are a colonizing species with a history of crisis-inducing resource exhaustion, it is time to transcend the Earth in search of another planet. While protecting people from anthropogenic threats is indisputably a collective goal, this astonishingly fatalistic response to the global ecological crisis suggests that, in the final analysis, the AI risk discourse offers no such protection. Why? The answer, I suggest, is that the value of “humanity” refers to the value of capital accumulation rather than to people. This becomes clear when we consider the lengths to which Bostrom goes to show why the “future of humanity” matters. He presents “cosmological estimates” showing the “total” future value of humanity to be somewhere between 1052 to 1054 total possible lives to be lived (2013, 19).9 Notably, these are not concrete lives, but lifespans of human activity serving as indicators of the total abstract value of humanity. The weighty numbers express the supposed enormity of the risk posed by a wrong turn on the road to the future, yet this total future value is not wealth that the collective “we” has now in its peoples, built habitats, and ecosystems. Rather, it is an estimate of the potential value of the joint stock company “Humanity” spread across the quasi-infinite expanse of space and time. We do not have it yet. To close that gap, Bostrom makes a teleological claim about progress toward “technological maturity.” The same assumptions about “instrumental values” that were applied to AI superintelligences also apply to the “perfection” of human technological civilization. It is simply “us” instead of “them” amassing powers in the forms of resources, technology, and knowledge. Discerning the difference between “us” and “them” thus lies in parsing the meaning of “humanity,” which Bostrom defined as “Earth-originating intelligent life.” Humanity’s animating spirit is not just “intelligence,” but “rationality” motivated by “what we have reason to value” (Bostrom 2013). The meaning of the qualifier “what we have reason to value” thus seems to make all the difference, yet it is elusive. At first glance, having the freedom to choose one’s form of embodiment—biological or machinic— seems like one such value for Bostrom. But he does not claim that such a freedom is an end in itself. Rather, the problematic of value is split between our present bodies and the shapes “we” might choose later on. By deferring “what” we are now—a deferral encoded in the claim to save “the future” of humanity—it seems like the collective “we” transcends the finitude of bodies, individual and planetary. But the very notion of existential risk reveals the paradox in the idea of the transcendental subject, for how can transcendent “intelligent life” be exposed to the possibility of its own finitude, its own extinction? The possibility that abstract “humanity” is determined by the same heteronomous forces that rule living bodies and Earth systems is an unhappy contradiction. It brings into view the merely instrumental value of “intelligence” itself in the narrative, the presupposition that it too is a contingent “ability” enstructured through the relation between use and exchange. Intelligence, like bodies, is not a good in itself in the existential risk theorem, but a “way of getting utilities,” and it is existentially vulnerable on the same account. This ultimate truth is confirmed when Bostrom nullifies the “future of humanity” on the supposition that even if it were possible for everyone to agree on what the best future might be, “we” might choose badly nonetheless. Thus, he argues, it is better not to choose at all! Rather, we should prioritize the instrumental means of value creation, keeping the “options open” for “a future version of humanity with great powers and propensity to pursue them wisely” (Bostrom 2013, 24). Hence, saving “humanity” means saving the future of value creation for its own sake, which is nothing other than the structural demand of capital accumulation operating “behind our backs.” Yet capitalism’s future relies on increasing productivity through the integration and automation of social labor and the relentless abstraction of concrete physical, social, and cultural abilities. Stephen Hawking’s pronouncement that “we” will need to abandon the Earth because it is becoming uninhabitable articulates the implications of this situation (Barclay 2017).10 So, while Bostrom claims that the “future of humanity” is “full” of value creation, my argument suggests that the future presupposed by Bostrom (2013, 2014), Hawking et al. (2014) and Russell et al. (2015) depends on continuing the present pattern of exhausting human and planetary “resources.” In the end, for there is an end in their narrative, a few will have accumulated enough “value” to purchase seats on a space ship to Mars, leaving the catastrophe to the rogue superintelligences and displaced climate migrants. This is the “existential risk” left to those who cannot afford to “transcend,” but it is not posed by out-of-control AI-systems. Rather, it is imposed as an unrecognized, fetishized demand of the system of capital accumulation, which we collectively inscribe, obey and enforce.

#### Pleasure and pain are dead. The 1AC call for space governance is form of compulsive repetition that causes desensitization to warfare and turns its existential risks.

Berardi 10, Franco. Precarious Rhapsody: Semiocapitalism and the Pathologies of Post-Alpha Generation. Minor Compositions, 2010 |Harun|

Connected bodies are subjected to a kind of progressive inability to feel pleasure, and forced to choose the way of simulating pleasure: the shift from touch to vision, from hairy bodies to smooth connectable bodies. The control on the body does not come from outside. The control is built inside, in the very relationship between self-perception and identity. When the info-sphere becomes hyper-speedy, hyper-thick, and the impulses are proliferating beyond any limit, we become less and less able to elaborate in a conscious way on the emotional impulses reaching our skin, our sensitivity, our brain. Consciousness is detached from sensitivity, and subjugated by the connective machine. Autistic behavior can be described as the effect of the inability to feel the other’s emotionality, and to project in the other’s body pleasure and pain that we feel in our body. Lack of empathy seems to be an endemic effect of the growing time of the exposure of the mind to the accelerated virtual info-sphere. The acceleration and intensification of nervous stimulants on the conscious organism seem to have thinned the cognitive film that we might call sensibility. Pornography grabs the attention quickly, you don’t need to work for it, you don’t need to feel empathy, you just watch. Almost like an autistic state of mind. It’s not necessary to try and understand the feelings of the other person, it’s not about them, they are objects or tools in the need for satisfaction. The bodies are deprived of everything that makes them human by the lurker. In this condition of autistic excitation without fulfillment social behavior tends to become something similar to obsessive rituals. In the year 1907, Freud wrote an essay on the symptomatology of obsession and the religious rituals. The ritual, he says, has something to do with the obsession, because it has the same character of irrealization and of compulsive repetition. Irrealization and compulsive repetition are peculiar in religious behavior as in pornographic sex. Religious behavior, like pornographic sexuality, performs a ritual which, in its nature, has the stigma of the obsessive neurosis: repetition of acts that are devoid of semantic meaning and devoid of special efficiency. Obsession: compulsive repetition of a ritual which does not fulfill its aim. The real scope of the ritual is the conjuration which holds the (rite maker’s) own world together. Porn in general has something to do with the ritual. It seems that in the experience of the first connective generation the bodily relationship is becoming growingly difficult, embarrassing. So the ritual is taking the place of pleasure, and porn becomes the repetition of an act of seeing which does not attain its emotional end. I’m not reclaiming any authenticity for the erotic self; I’m not fantasizing about the golden age of sexual happiness. I’m just interested in finding the signs of a pathology in the current proliferation of pornography: namely a pathology of emotionality. This pathology, which is latent in every kind of pornographic product, is highlighted by the mediatization, and especially by the net proliferation of porn. Since image and emotion are separated, the pornographic act (of vision) does not produce the emotional effect we are expecting. So we repeat the act (of vision). The net is the place of endless replication – therefore it is the ideal place of pornographic ritual. Stimulus hypertrophy is the general frame which generates current obsession in the saturated info-sphere. During their long evolution, human beings have slowly learned to elaborate the stimulus of sexual excitation: the entire history of culture can be viewed as a way to elaboration of the sexual desire. Through imagination and language human beings manage to balance the stimulus coming from the environment, and the psychic and sexual response to it. We’re now living in the age of info-proliferation. The saturation of the info-sphere provokes a stimulus overload, and this has an obvious cognitive effect: time for attention decreases. But affective attention takes time, and cannot be shortened or fastened. This leads to a disorder in the emotional elaboration of meaning. Affective attention suffers a kind of contraction, and it is forced to find ways of adaptation: the organism adopts tools for simplification, and it tends to smooth out the living psychic response, to repackage affective behavior in a frozen and fastened framework. The focal point is the shortening of time for emotional elaboration: pornography is in turn one of the causes of this saturation, and one of the effects, or, better, one of the symptoms of it. Pornography concurs to the saturation of the info-sphere, and it is simultaneously an escape from 101 // Frail Pyscho-sphere the disturbed psycho-sphere. What is the meaning of the word emotion? Emotion is the meeting point between body and cognition: it is a bodily elaboration of information that is reaching our mind. The time of emotionality can be fast (very fast) and can be slow. But sexual emotion needs slow time for elaboration. The time of caresses cannot be shortened by automatic engines, although pharmacology can fasten the sexual reactions, and speed up erection. The use of sexual stimulants like Viagra has not so much to do with impotence, but with haste, and emotional disturbances. The electronic excitation conveyed through the entire mediascape puts the sensitive organism in a state of permanent electrocution. Time for linguistic elaboration of a single input is reduced as the number of inputs increase, and the speed of the input gets higher. Sex is not speaking anymore. It is rather babbling, and faltering, and it is also suffering of it. Too few words, too little time to talk. Too little time to feel. Porn is an exercise in emotional automation and uniformity of the emotional time of response. Don’t miss the implication between permanent electrocution, the shortening of linguistic attentive elaboration and atrophy of emotional response. Pornography is just the visible surface of this neuro short circuit. The connective generation is showing signs of an epidemic of emotional atrophy. The disconnection between language and sexuality is striking. Pornography is the ultimate form of this disconnection. When a group of very young men in a northern Italian place murdered a young girl after harassing her, the investigators who studied the case were stunned by the inability of the youngsters to verbalize their act, their feeling, and their motivation. Syntactic elaboration reduced to zero. Monosyllables. Onomatopoeic sounds. Sensitivity is invested in this turn, and it enters a process of re-formatting; the new format is the smooth, the connectible. Sexual imagination is overwhelmed by the hairless smoothness of the digital image. The perception of the real body of the other in daily life is becoming obnoxious: hard to touch, hard to feel, hard to enjoy. This pathological turn of the psycho-sphere seems to me the main feature of the current anthropological mutation which encompasses social change, and politics and the global tragedy of terrorthat is devastating the perception of the bodies that are surrounding and touching our own. The obsessive repetition of a gesture that is no longer able to fulfill its aim, the hopeless effort to grasp a pleasure that we have no time to nurture, all this has very much to do with the coming back of violence, of war and of torture into the world scene. Both in the western and in the Islamic world, we are undergoing a daily instigation to fear, to aggression, to hate. The bodily imagination is disturbed by the growing all-pervading ecology of fear. Although never erased from the hidden reality of history, for a long time torture has been rejected by the consciousness and excluded from the field of social visibility. After the defeat of Nazism, torture has been considered the ultimate mark of inhumanity. But during the last few years, just in the dawn of the new century, torture has resurfaced, abruptly becoming a normal tool of political action. Torturers and their accomplices are officially sitting in power in the US, in Russia and in many other places. Torturers are showing their deeds to their friends by the means of videophonic display and the internet. Beheading is proudly shown as a demonstration of bravery and religious faith. How could it happen? Why has social sensitivity turned to barbarism and inhumanity? We have to understand what is happening in the deepness of bodily perception, if we want to understand what is happening on the surface of terrorist and military action. Pornography and torture have little in common, if anything. But their media diffusion takes place in the same vacuum generated by the atrophy of emotionality. The inability to feel pleasure has its counterpart in the inability to perceive horror as horror.

#### The alternative is to engage in a schizoanalytic framework and revitalize the subject.

Berardi 17, Franco "Bifo.". Soul At Work. AAKAR Books, 2017 |harun|

The political and economic knowledge we have inherited from modern rationalist philosophy is now useless, because the current collapse is the effect of the infinite complexity of immaterial pro-duction and of the incompatibility or unfitness of the general intellect when confronted with the framework of capitalist governance and private property. Chaos (i.e. a degree of complexity which is beyond the ability of human understanding) now rules the world. Chaos means a reality which is WO complex to be reduced to our current paradigms of understanding. The capitalist paradigm can no longer be the uni-versal rule of human activity. We should not look at the current recession only from an eco-nomic point of view. We must see it as an anthropological turning point that is going to change the distribution of world resources and of world power. The model based on growth has been deeply interiorized, since it pervaded daily life, perception, needs, and consumption styles. But growth is over and will never be back, not only because people will never be able to pay for the debt accumulated during the past three decades, but also because the physical planetary resources are close to exhaustion and the social brain is on the verge of collapse. Catastrophe and morphogenesis The process underway cannot be defined as a crisis. Crisis means the destructuration and restructuration of an organism which is nonetheless able to keep its functional structure. I don't think that we will see any re-adjustment of the capitalist global structure. We have entered a major process of catastrophic morphogenesis. The capitalist paradigm, based on the connection between revenue and work performance is unable to frame (semiotically and socially) the present configuration of the general intellect. In the 1930s the opportunity for a New Deal rested on the availability of physical resources and in the possibility of increasing individual demand and consumption. All that is over. The planet is running out of natural resources and the world is heading towards an environmental catastrophe. The present economic downturn and the fall in oil prices ate feeding the depletion and exhaustion of planetary resources. At the same time, we cannot predict any boom in individual consumption, at least in the Western societies. So it is simply non- sensical to expect an end to this crisis, or a new policy of full employment. There will be no full employment in the future. The crash in the global economy is not only an effect of the bursting of the financial bubble. It is also and primarily an effect of me bursting of the work bubble. We have been working too much during the last five centuries, this is the simple truth. Working so much has implied an abandonment of vital social functions and a commodification of language, affections, teaching, therapy and self-cate. Society does not need more work, more jobs, more competition. On the contrary: we need a massive reduction in work-time, a prodigious liberation of life from the social factory, in order to reweave the fabric of the social relation. Ending the connection between work and revenue will enable a huge release of energy for social tasks that can no longer be conceived as a part of the economy and should once again become forms of life. As demand shrinks and factories close, people suffer from a lack of money and cannot buy what is needed for everyday life. This is a vicious circle that the economists know very well but are completely unable to break, because it is the double bind that the economy is doomed to feed. The double bind of over-production cannot be solved by economic means, but only by an anthropological shift, by the abandonment of the economic framework of income in exchange for work. We have simultaneously an excess of value and a shrinking of demand. A redistribution of wealth is urgendy needed. The idea that income should be the reward for a performance is a dogma we must absolutely get rid of. Every person has the right to receive the amount of money that is needed for survival. And work has nothing to do with this. Wages are not a natural given, but the product of a specific cultural modeling of the social sphere: linking survival and subordination to the process of exploitation was a necessity of capitalist growth. Now we need to allow people to release their knowledge, intelligence, affects. This is today's wealth, not compulsive useless labour. Until the majority of mankind is free from the connection between income and work, misery and war will be the norm of the social relationship. How to heal a depression? Although they seldom, if ever, used the "D" word, Felix Guattati and Gilles Deleuze say very interesting things on the subject in their last books, Chaosmosis, and What is philosophy.' In the final chapter of What is philosophy? they speak of Chaos. Chaos, in their woods, has very much to do with the acceleration of the semiosphere and the thickening of the info-crust. The acceleration of the surround-ing world of signs, symbols and info-stimulation is producing panic, as I have already said in the previous parts of this book. Depression is the deactivation of desire after a panicked acceleration. When you are no longer able to understand the flow of information stimulating your brain, you tend to desert the field of communication, disabling any intellectual and psychological response. Let's go back to a quote that we have already used: "Nothing is more distressing than a thought that escapes itself, than ideas that fly off, that disappear hardly formed, already eroded by forgetfulness or precipitated into others that we no longer master. », We should not see depression as a mere pathology, but also as a form of knowledge. James Hillman says that depression is a condition in which the mind faces the knowledge of impermanence and death. Suffering, imperfection, seniliry, decomposition: this is the truth that you can see from a depressive point of view. In the introduction to What is philosophy? Ddeuze and Guattari speak of friendship. They suggest that friendship is the way to overcome depression, because friendship means sharing a sense, sharing a view and a common rhythm: a common reftain (ritournelle) in Guattari's parlance. In Chaosmosis Guattari speaks of the "heterogenetic comprehension of subjectivity" : "Daniel Stern, in The Interpersonal World of the Infant, has notably explored the pre-verbal subjective formations of infants. He shows that there are not at all a matter of 'stages' in the Freudian sense, but of levels of subjectivation which maintain themselves in parallel through life. He thus rejects the overrated psychogenesis of Freudian complexes, which have been presented as the structural 'Universals' of subjectivity. Furthermore he emphasizes the inhetently trans-subjective character of an infant's early experiences:J2 The singularity of psychogenesis is central in Guattari's schizoanalytic vision. This implies also the singularity of the therapeutic process. it's not simply a matter of remodeling a patient's subjectivity—as it existed before a psychotic crisis—but of a production sui genesis... these complexes actually offer people diverse possibilities for recomposing their existential corporeality, to get WI of their repetitive impasses and, in a certain way to resin-gularize themselves." These few lines must be read, in my opinion, not only as a psychotherapeutic manifesto but also as a political one. The goal of schizoanalysis is not, in Guattari's words, to reinstall the universal norm in the patient's behavior, but to singularize him/her, to help him/her becoming conscious of his or her differ-ence, to give him/her the ability to be in good stead with his being different and his actual possibilities. When dealing with a depression the problem is not to bring the depressed person back to normality, to reintegrate behavior in the universal standards of normal social language. The goal is to change the focus of his/her depressive attention, to re-focalize, to deterrito-rialize the mind and the expressive flow. Depression is based on the hardening of one's existential refrain, on its obsessive repetition. The depressed person is unable to go out, to leave the repetitive refrain and s/he keeps going back into the labyrinth. The goal of the schizoanalyst is to give him/her the possibility of seeing other landscapes, to change focus, to open new paths of imagination. I see a similarity between this schizoanalytic wisdom and the Kuhnian concept of paradigmatic shift which needs to occur when scientific knowledge is taken inside a conundrum. In The Structure of Scientific Revolutions (1962) Kuhn defines a paradigm as "a con-stellation of belies shared by a group of people." A paradigm may therefore be seen as a model which gives way to the understanding of a certain set of realities. A scientific revolution in Kuhn's vision is the creation of a new model which fits the changing reality better than the previous epistemic models. The word aepisteme" in the Greek language means to stand in front of something: the epistemic paradigm is a model that allows us to face reality. A paradigm is a bridge which gives friends the ability to traverse the abyss of non-being. Overcoming depression implies some simple steps: the deterrito-rialization of the obsessive refrain, the re-focalization and change of the landscape of desire, but also the creation of a new constellation of shared beliefs, the common perception of a new psychological environment and the construction of a new model of relationship. Deleuze and Guactari say that philosophy is the discipline that involves creating concepts. In the same way, they argue that schizo-analysis is the discipline that involves creating percepts and affects through the deterritorialization of obsessive frameworks In the current situation, the schizoanalytic method should be applied as political therapy: the Bipolar Economy is falling into a deep depression. What happened during the first decade of the cen-tury can be described in psychopathological terms, in terms of panic and depression. Panic happens when things start swirling around too quickly, when we can no longer grasp their meaning, their eco-nomic value in the competitive world of capitalist exchange. Panic happens when the speed and complexity of the surrounding flow of information exceed the ability of the social brain DJ decode and pre-dict. In this case desire withdraws its investments, and this withdrawal gives way to depression. Here we are, after the subprime crack and the following global collapse. Now what? The economic collapse cannot be solved with the tools of nomic thought, because economic conceptualization is in fact problem and not the solution. The strict correlation between income and labot, the tartatic. pursuit of growth, the dogmas of compatibility and cOlmpetiltiollS these are the pathogenic features that our social culture must get rid of, if we want to come out of our depression. In the nc'mlin.nt) political discoutse, the overcoming of a depression means re';ta':tirtg.' the dynamics of growrh and consumption: this is what they "recovery." But this will be impossible both because the colle,othre:. debt cannot be paid and because the planet cannot support a new phase of capitalist expansion. The economy of growth is itself poison. It cannot be the antidote. Over the last ten years, the French anthropologist Serge Latouche has been talking of dicroissance (Degrowth) as a political goal. But now dissonance is simply a fact: when the Gross National Product is falling everywhere, entire sections of the industrial system are crumbling and demand is plummeting, we can say that degrowth is no longer a program for the future. Degrowth is here. The problem is that social culture is not ready for this, because Our social organization is based on the idea of the interminable expansion of consumption, and the modern soul has been shaped by the concept of privatization and by the affects of an unending increase in consumption. The very notion of wealth has to be reconsidered: not only the concept of wealth, but the perception of being rich. The identification of wealth with purchasing power is deeply embedded in the social psyche and affectivity. But a different understanding of wealth is possible, one that is not based on possession, but on enjoyment. I'm not thinking of an ascetic turn in the collective perception of wealth. I think that sensual pleasure will always be the foundation of well-being. But what is pleasure? The disciplinary culture of modernity has equated pleasure and possessing. Economic thinking has created scarcity and has privatized social need, in order to make possible the process of capitalist accumulation. Therein lies the source of the current depression. The interminable process of therapy We should not expect a swift change in the social landscape, but rather the slow surfacing of new trends: communities will abandon the field of the crumbling economy; more and more individuals will abandon their job searches and will start creating extra-economic networks of survival. The very perception of well being and of being rich will change in the direction of frugality and freedom. The de-privatization of services and goods will be made possible by this much-needed cultural revolution. This will not happen in a planned and uniform manner. It will be the effect of the withdrawal of Singular individuals and communities and of the creation of an economy based on the sharing of common things and services and on the liberation of time for culture, pleasure and affection. The identification of well-being with private property is so deeply rooted that we cannot absolutely rule out the eventuality of a barbarization of the human environment. But the task of the general intellect is precisely this: to escape from paranoia, to create zones of human resistance, to experiment with autonomous forms of production based on high-tech/low-energy models, to interpellated the people with a language that is more therapeutic than political. In the days to come, politics and therapy will be one and the same. The people will feel hopeless and depressed and panicked, because they can't deal with the post-growth economy and they will miss our dissolving modern identity. Our cultural task will be to attend to these people and to take care of their trauma showing them the way to pursue the happy adaptation at hand. Our task will be the creation of social zones of human resistance, zones of therapeutic contagion. Capitalism will not disappear from the global landscape, but it will lose its pervasive, paradigmatic role in our semiorization, it will become one of possible form of social organization. Communism will never be the principle of a new totalization, but one of the possible forms of autonomy from capitalist rule. In the 1 960s, Castoriadis and his friends published a magazine whose title was: Socialism or Barbarism. Bur you will recall that in Rhizome, the introduction to A Thousand Plateaus, Deleuze and Guattari argue that the disjunction (or. .. or. .. or) is precisely the dominant mode of Western Metaphysics that we are trying to forget. They oppose this disjunctive model with a conjunctive approach: "A rhizome has no beginning or end, bur it is always a middle, between things, interbeing, intermezzo. The tree is filiation, bur the rhizome is alliance, uniquely alliance. The tree imposes the verb 'to be: but the fabric of the rhizome is the conjunction, 'and ... and ... and .. .' This conjunction carries enough force to shake and uproot the verb 'to be' [ ... J to establish a logic of the AND, overthrow ontology, do away with foundations, nullifY endings and beginnings.'" The process of autonomy should not be seen as Aufhebung, but as Therapy. In this sense, it is neither totalizing and nor it is intended to destroy and abolish the past. In a letter to his master, Sigmund Freud, the young psychoanalyst Fliess asked when it is possible to consider a therapy to be over and the patient be told, "you are ok." Freud answered that the psychoanalysis has reached its goal when the person understands that therapy is an interminable process. Autonomy is also a process without end.

### Case

#### Alt cause – broad space privatization and existing debris.

Muelhapt et al 19 [(Theodore J., Center for Orbital and Reentry Debris Studies, Center for Space Policy and Strategy, The Aerospace Corporation, 30 year Space Systems Analyst and Operator, Marlon E. Sorge, Jamie Morin, Robert S. Wilson), “Space traffic management in the new space era,” Journal of Space Safety Engineering, 6/18/19, https://doi.org/10.1016/j.jsse.2019.05.007] TDI

The last decade has seen rapid growth and change in the space industry, and an explosion of commercial and private activity. Terms like NewSpace or democratized space are often used to describe this global trend to develop faster and cheaper access to space, distinct from more traditional government-driven activities focused on security, political, or scientific activities. The easier access to space has opened participation to many more participants than was historically possible. This new activity could profoundly worsen the space debris environment, particularly in low Earth orbit (LEO), but there are also signs of progress and the outlook is encouraging. Many NewSpace operators are actively working to mitigate their impact. Nevertheless, NewSpace represents a significant break with past experience and business as usual will not work in this changed environment. New standards, space policy, and licensing approaches are powerful levers that can shape the future of operations and the debris environment. 2. Characterizing NewSpace: a step change in the space environment In just the last few years, commercial companies have proposed, funded, and in a few cases begun deployment of very large constellations of small to medium-sized satellites. These constellations will add much more complexity to space operations. Table 1 shows some of the constellations that have been announced for launch in the next decade. Two dozen companies, when taken together, have proposed placing well over ~~20,000~~ [twenty thousand] satellites in orbit in the next ~~10~~ [10]years. For perspective, fewer than ~~8100~~[eight thousand one hundred] payloads have been placed in Earth orbit in the entire history of the space age, only 4800 [1] remain in orbit and approximately 1950 [2] of those are still active. And it isn't simply numbers – the mass in orbit will increase substantially, and long-term debris generation is strongly correlated with mass. [Table 1 Omitted] This table is in constant flux. It is based largely on U.S. filings with the Federal Communications Commission (FCC) and various press releases, but many of the companies here have already altered or abandoned their original plans, and new systems are no doubt in work. Although many of these large constellations may never be launched as listed, the traffic created if just half are successful would be more than double the number of payloads launched in the last 60 years and more than 6 times the number of currently active satellites. Current space safety, space surveillance, collision avoidance (COLA) and debris mitigation processes have been designed for and have evolved with the current population profile, launch rates and density of LEO space. By almost any metric used to measure activity in space, whether it is payloads in orbit, the size of constellations, the rate of launches, the economic stakes, the potential for debris creation, the number of conjunctions, NewSpace represents a fundamental change. 3. Compounding effects of better SSA, more satellites, and new operational concepts The changes in the space environment can be seen on this figurative map of low Earth orbit. Fig. 1 shows the LEO environment as a function of altitude. The number of objects found in each 10 km “bin” is plotted on the horizontal axis, while the altitude is plotted vertically. Objects in elliptical orbits are distributed between bins as partial objects proportional to the time spent in each bin. Some notable resident systems are indicated in blue text on the right to provide an altitude reference. The (dotted) red line shows the number of objects in the current catalog tracked by the U.S. Space Surveillance Network (SSN). All the COLA alerts and actions that must be taken by the residents are due to their neighbors in the nearby bins, so the currently visible risk is proportional to the red line. The red line of the current catalog does not represent the complete risk; it indicates the risk we can track and perhaps avoid. A rule of thumb is that the current SSN LEO catalog contains objects about 10 cm or larger. It is generally accepted that an impact in LEO with an object 1 cm or larger will cause damage likely to be fatal to a satellite's mission. Therefore, there is a large latent risk from unobserved debris. While we cannot currently track and catalog much smaller than 10 cm, experiments have been performed to detect and sample much smaller objects and statistically model the population at this size [3]. The (solid) blue line represents the model of the 1 cm and larger debris that is likely mission-ending, usually called lethal but not trackable. If LEO operators avoid collisions with all the objects in the red line, they are nonetheless inherently accepting the risk from the blue line. This risk is already present. The (dashed) orange line is an estimate of the population at 5 cm and larger and is thus an estimate of what the catalog might conservatively be a few years after the Space Fence, a new radar system being built by the Air Force, comes on line (currently planned for 2019) [4]. Commercial companies offering space surveillance services, such as LeoLabs, ExoAnalytics, Analytic Graphics Inc., Lockheed, and Boeing, might also add to the number of objects currently tracked. Space Policy Directive 3 (SPD-3) [13] specifically seeks to expand the use of commercial SSA services. Existing operators can expect a sharp increase in the number of warnings and alerts they will receive because of the increase in the cataloged population. Almost all the increase will come from newly detected debris [5]. The pace of safety operations for each satellite on orbit will significantly change because of the increase in the catalog from the Space Fence. This effect is compounded because the NewSpace constellations described in Table 1 will drastically change the profile of satellites in LEO. The green bars in Fig. 1 represent the number of objects that will be added to the catalog (red or orange lines) from only the NewSpace large LEO constellations at their operational altitudes. This does not include the rocket stages that launch them, or satellites in the process of being phased into or removed from the operational orbits. Neighbors of one of these new constellations may face a radically different operations environment than their current practices were designed to address. Satellites in these large LEO constellations typically have planned operational lifetimes of 5–10 years. Some companies have proposed to dispose of their satellites using low thrust electric propulsion systems, which would spiral satellites down over a period of months or years from operating altitudes as high as 1500 km through lower orbits where the Hubble Space Telescope, the International Space Station, and other critical LEO satellites operate [6]. Similar propulsive techniques would raise replacement satellites from lower launch injection orbits to higher operational orbits. These disposal and replenishment activities will add thousands of satellites each year transiting through lower altitudes and posing a risk to all resident satellites in those lower orbits. More importantly, failures will occur both among transiting satellites and operational constellations, potentially leaving hundreds more stranded along the transit path.

#### Public Sector thumps-

Voosen 21 [(Paul Voosen, 5-5-2021), "NASA's new fleet of satellites will offer insights into the wild cards of climate change," Science, <https://www.science.org/content/article/nasas-new-fleet-satellites-will-offer-insights-wild-cards-climate-change>] ZS

NASA is about to announce its next generation of Earth-observing satellites. As soon as this month, it will lay out preliminary plans for a multibillion-dollar set of missions that will launch later this decade. This "Earth system observatory," as NASA calls it, will offer insights into two long-standing wild cards of climate change—clouds and aerosols—while providing new details about the temperatures and chemistry of the planet's changing surface. The satellite fleets also mark a revival for NASA's earth science, which has languished over the past decade compared with exploration of Mars and other planets. Although officials have been planning the missions for several years, the Biden administration is accelerating them as part of its focus on addressing climate change. "Earth system science is poised to make an enormous difference in our ability to mitigate, adapt to, and plan for changes we're seeing," says Karen St. Germain, director of NASA's earth science division. "The pace we're going to have to do that is much higher in the decade in front of us than the decade behind us." Agency spokespeople declined to provide details about the missions because they have not yet been formally approved. But at a workshop last month, Charles Webb, an associate director for flight programs at NASA, said four missions would go ahead, launching as soon as 2028—an acceleration of plans under the Trump administration, when only two missions were scheduled to begin development. "It became pretty clear the greatest science return is having all of these in operation close to each other," Webb said. The missions lack official names, but go by the shorthand of ACCP (Aerosol, Cloud, Convection, and Precipitation), which covers two missions; Surface Biology and Geology (SBG), and Mass Change , which would measure tiny variations in gravity indicating changes in ice and water. The administration's proposed 15% bump for NASA's earth science budget for next year, to $2.3 billion, would help fund the accelerated program. The increase would also be welcome news for NASA's earth science researchers after 2 decades operating under administrations leery of climate. Jeremy Werdell of NASA's Goddard Space Flight Center recalls multiple attempts by the Trump administration to kill Pace, a $900 million ocean-monitoring satellite for which he is principal investigator. "You'd see the chart with all the upcoming missions, and you'd see yours isn't there." (The mission survived and is due to launch in 2023.) However, even President Joe Biden's proposed investment would leave NASA's inflation-adjusted spending on earth science below the levels 20 years ago, says Waleed Abdalati, director of the Cooperative Institute for Research in Environmental Sciences at the University of Colorado, Boulder, and former NASA chief scientist. "We're well behind where we were."

#### Low risk of collisions – it’s overhyped

Albrecht 16 [Mark Albrecht, chairman of the board of USSpace LLC, head of the White House National Space Council from 1989 to 1992, and Paul Graziani, CEO and founder of Analytical Graphics, a company that develops software and provides mission assurance through the Commercial Space Operations Center (ComSpOC), Congested space is a serious problem solved by hard work, not hysteria, 2016, https://spacenews.com/op-ed-congested-space-is-a-serious-problem-solved-by-hard-work-not-hysteria/]

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

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

So what are the facts?

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

#### No impact to debris – it hits stations all the time.

Cain ’15 (Fraser; 12/23/15; writer for Universe Today; “How Do Astronauts Avoid Debris”; http://www.universetoday.com/121067/how-do-astronauts-avoid-debris)

So, just how do we keep our space stations, ships and astronauts from being riddled with holes from all of the space junk in orbit around Earth? We revel in the terror grab bag of all the magical ways to get snuffed in space. Almost as much as we celebrate the giant brass backbones of the people who travel there. We’ve already talked about all the scary ways that astronauts can die in space. My personal recurring “Hail Mary full of grace, please don’t let me die in space” nightmare is orbital debris. We’re talking about a vast collection of spent rockets, dead satellites, flotsam, jetsam, lagan and derelict. It’s not a short list. NASA figures there are **21,000 bits of junk** bigger than 10 cm, **500,000 particles** between 1 and 10 cm, and more than **100 million** smaller than 1 cm. Sound familiar, humans? This is our high tech, sci fi great Pacific garbage patch. Sure, a tiny rivet or piece of scrap foil doesn’t sound very dangerous, but consider the fact that astronauts are orbiting the Earth at a velocity of about 28,000 km/h. And the Tang packets, uneaten dehydrated ice cream, and astronaut poops are also traveling at 28,000 km/h. Then think about what happens when they collide. Yikes… or yuck. Here’s the International Space Station’s solar array. See that tiny hole? Embiggen and clarinosticate! That’s a tiny puncture hole made in the array by a piece of orbital crap. The whole station is **pummeled by tiny pieces of space program junk drawer contents**. Back when the Space Shuttle was flying, NASA had to **constantly replace their windows because of the damage they were experiencing** from the orbital equivalent of Dennis the Menace hurling paint chips, fingernail clippings, and frozen scabs.

#### Their own card shows how unlikely collisions are- 5% is nothing.

Sarah Scoles 15, “Dust from asteroid mining spells danger for satellites,” New Scientist, 5-27-2015, https://www.newscientist.com/article/mg22630235-100-dust-from-asteroid-mining-spells-danger-for-satellites/

NASA chose the second option for its Asteroid Redirect Mission, which aims to pluck a boulder from an asteroid’s surface 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 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). That may not have immediate consequences. But as Earth orbits get more crowded with spent rocket stages and satellites, we will have to worry about cascades of collisions like the one depicted in the movie Gravity. Handmer and Roa want to point out the problem now so that we can find a solution before any satellites get dinged. “It is possible to quantify and manage the risk,” says Handmer. “A few basic precautions will prevent harm due to stray asteroid material.”

#### Asteroid mining fails- it’s too costly

Fickling 20 [(David, Bloomberg opinion columnist, previously at Guardian and Financial Times, MA in Eng Lit from Cambridge) “We’re Never Going to Mine the Asteroid Belt,” Bloomberg Opinion, December 21, 2020, <https://www.bloomberg.com/opinion/articles/2020-12-21/space-mining-on-asteroids-is-never-going-to-happen>] TDI

It’s wonderful that people are shooting for the stars — but those who declined to fund the expansive plans of the nascent space mining industry were right about the fundamentals. Space mining won’t get off the ground in any foreseeable future — and you only have to look at the history of civilization to see why. One factor rules out most space mining at the outset: gravity. On one hand, it guarantees that most of the solar system’s best mineral resources are to be found under our feet. Earth is the largest rocky planet orbiting the sun. As a result, the cornucopia of minerals the globe attracted as it coalesced is as rich as will be found this side of Alpha Centauri. Gravity poses a more technical problem, too. Escaping Earth’s gravitational field makes transporting the volumes of material needed in a mining operation hugely expensive. On Falcon Heavy, the large rocket being developed by Elon Musk’s SpaceX, transporting a payload to the orbit of Mars comes to as little as [$5,357 per kilogram](https://www.spacex.com/media/Capabilities&Services.pdf) — a drastic reduction in normal launch costs. Still, at those prices just lofting a single half-ton drilling rig to the asteroid belt would use up the annual exploration budget of a small mining company. Power is another issue. The international space station, with 35,000 square feet of solar arrays, generates up to 120 kilowatts of electricity. That drill would need a [similar-sized power plant](https://www.rocktechnology.sandvik/en/products/exploration-drill-rigs-and-tools/compact-core-drill-rigs/) — and most mining companies operate multiple rigs at a time. Power demands rise drastically once you move from exploration drilling to mining and processing. Bringing material back to Earth would raise the costs even more. Japan’s Hayabusa2 satellite spent six years and 16.4 billion yen ($157 million) recovering a single gram of material from the asteroid Ryugu and returning it to Earth earlier this month.

#### Chinese and Russian militarization is an alt causes to space cooperation

Bowman and Thompson 3/31 [(Bradley Bowman, the senior director of the Center on Military and Political Power at the Foundation for Defense of Democracies) (Jared Thompson, a U.S. Air Force major and visiting military analyst at the Foundation for Defense of Democracies.) “Russia and China Seek to Tie America’s Hands in Space” Foreign Policy 3/31/2021. https://foreignpolicy.com/2021/03/31/russia-china-space-war-treaty-demilitarization-satellites/] BC

Consider the actions of the United States’ two great-power adversaries when it comes to anti-satellite weapons. China and Russia have sprinted to develop and deploy both ground-based and space-based weapons targeting satellites while simultaneously pushing the United States to sign a treaty banning such weapons.

To protect its vital space-based military capabilities—including communications, intelligence, and missile defense satellites—and effectively deter authoritarian aggression, Washington should avoid being drawn into suspect international treaties on space that China and Russia have no intention of honoring.

The Treaty on the Prevention of the Placement of Weapons in Outer Space and of the Threat or Use of Force Against Outer Space Objects (PPWT), which Beijing and Moscow have submitted at the United Nations, is a perfect example. PPWT signatories commit “not to place any weapons in outer space.” It also says parties to the treaty may not “resort to the threat or use of force against outer space objects” or engage in activities “inconsistent” with the purpose of the treaty.

On the surface, that sounds innocuous. Who, after all, wants an arms race in space?

The reality, however, is that China and Russia are already racing to field anti-satellite weapons and have been for quite some time. “The space domain is competitive, congested, and contested,” Gen. James Dickinson, the head of U.S. Space Command, said in January. “Our competitors, most notably China and Russia, have militarized this domain.”

Beijing already has an operational ground-based anti-satellite missile capability. People’s Liberation Army units are training with the missiles, and the U.S. Defense Department believes Beijing “probably intends to pursue additional [anti-satellite] weapons capable of destroying satellites up to geosynchronous Earth orbit.” That is where America’s most sensitive nuclear communication and missile defense satellites orbit and keep watch.

Similarly, Moscow tested a ground-based anti-satellite weapon in December tha

t could destroy U.S. or allied satellites in orbit. That attack capability augments a ground-based laser weapon that Russian President Vladimir Putin heralded in 2018. In a moment of candor, Russia’s defense ministry admitted the system was designed to “fight satellites.”

To make matters worse, both countries are also working to deploy space-based—or so-called “on-orbit”—capabilities to attack satellites.

Meanwhile, at the United Nations and other international forums, China and Russia are pushing the PPWT and advocating for a “no first placement” resolution—saying all governments should commit not to be the first to put weapons in space.

Yet more than two years ago, the U.S. Defense Intelligence Agency noted that both China and Russia were already putting in space capabilities that could be used as weapons. The PPWT would thus protect their weapons while tying Washington’s hands.

In a thinly veiled attempt to mask their intentions, the two countries claim that their on-orbit capabilities are simply for peaceful purposes—for assessing the condition of broken satellites and conducting repairs as needed. This “dual-use” disguise permits Beijing and Moscow to put into orbit ostensibly peaceful or commercial capabilities that those countries can actually use to disable or destroy U.S. military and intelligence satellites.

#### Alliances check miscalc – too costly

MacDonald 13 [(Bruce, teaches at the United States Institute of Peace on strategic posture and space/cyber security issues, leads a study on China and Crisis Stability in Space, and is adjunct professor at the Johns Hopkins School of Advanced International Studies) “Deterrence and Crisis Stability in Space and Cyberspace,” in Anti-satellite Weapons, Deterrence and Sino-American Space Relations, September 2013, <https://apps.dtic.mil/dtic/tr/fulltext/u2/a587431.pdf>] TDI

The US alliance structure can promote deterrence and crisis stability in space, as with nuclear deterrence. China has no such alliance system. If China were to engage in large-scale offensive counter-space operations, it would face not only the United States, but also NATO, Japan, South Korea and other highly aggrieved parties. Given Beijing’s major export dependence on these markets, and its dependence upon them for key raw material and high technology imports, China would be as devastated economically if it initiated strategic attacks in space. In contrast to America’s nuclear umbrella and extended deterrence, US allies make a tangible and concrete contribution to extended space deterrence through their multilateral participation in and dependence upon space assets. Attacks on these space assets would directly damage allied interests as well as those of the United States, further strengthening deterrent effects.