PROLEGOMENA TO PLANETARY CYBERNETICS

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We are tribeless and all tribes are ours.
We are homeless and all homes are ours.
We are nameless and all names are ours.

-- Emmanuel Lacaba

In 1808, Charles Fourier wrote that "the most icy climates in the world, such as those on a line from St Petersburg to Okhotsk, will enjoy temperatures such as can as yet only be found in the most renowned resorts, like Florence, Nice, Montpellier and Lisbon, blessed as they are with gentle and unruffled skies."[1] This statement might be the earliest indication of a climate change issue that has become our reality. Furthermore, the French utopian communist correctly pointed out such global warming would occur in combination with the "universal cultivation" of the Earth. For Fourier, the "cultivation" would be accompanied by "false industry," such as monopolization, financialization and colonization, which structurally dovetailed with

[1] Charles Fourier, *The Theory of the Four Movements*, trans. Ian Patterson (Cambridge: Cambridge University Press, 1996), p. 48.

the material deterioration of the planet.[2] Fourier's notion of "climate change" (*des modifications climatériques*) did not mean a mere natural phenomenon but the effect of the Anthropocene: indeed, Fourier pointed to the impact of human activity on climate change. Endorsing contemporary scientific observation, Fourier clarified the evidence of his hypothesis by comparing the average temperature between Canada and Europe. He concluded that this temperature difference of 10 to 42 degrees proves human influence on climates.

Because he related the climatic disturbance to the limitations of capitalism, his thesis is significantly more interesting. Fourier emphasized that the growth of capitalism will be the source of the greenhouse effect and the escalation of global warming. From this vantage point, his thesis presented a revisionary interpretation of planetary history that disclosed the fragile foundation upon which civilization is built. He accentuated the disturbing truth that humans enjoy safety within the boundary of civilization and "occupy only a tiny part of the globe."[3] In this way, the false industry of capitalism destroys cosmological harmony and exploits nature under the moral cover of the "absurd science of economics."[4] Fourier's analysis of climate destabilization led to his uncanny prophecy, anticipating ocean pollution affecting marine organisms, ecosystems, and humans. He explained that global warming "will change the taste of the sea and disperse or precipitate bituminous particles by spreading a *boreal citric acid*."[5] The following quotation clearly illustrates Fourier's heterodox naturalism:

[2] Charles Fourier, "Détérioration matérielle de la planète," in *L'écosophie de Charles Fourier. Deux textes inédits*, ed. René Schérer (Paris: Economia, 2001), p. 31.
[3] Fourier, *The Theory of the Four Movements*, p. 273.
[4] Ibid., p. 247.
[5] Ibid., p. 50.

> In combination with salt, this liquid will give the sea a flavour of the kind of lemonade known as *aigresel*. It will thus be easy to remove the saline and citric particles from the water and render it drinkable, which will make it unnecessary for ships to be provisioned with water. This breaking down of sea water by the boreal liquid is a necessary preliminary to the development of new sea creatures, which will provide a host of amphibious servants to pull ships and help in fisheries, replacing the ghastly legions of sea monsters which will be annihilated by the admixture of boreal fluid and the consequent changes in the sea's structure.[6]

Of course, Fourier did not regard this climate disorder as a catastrophe but as "improvements." This attitude was a consequence of Fourier's visionary utopianism; however, his cheerful prediction ironically reveals the other side of scientific positivism – the anthropocentric knowledge of nature. Fourier's naturalism related human social transformation to the nonhuman world's phenomena – the natural incidents correspond to the "hieroglyphs" of the human social order. Each animal has hieroglyphs, like a peacock with a beautiful tail and ugly feet. This harmonious (or paradoxical) balance implicates the final purpose of climate change. Even a giraffe, an animal with an inconvenient neck, was created to depict "the complete uselessness of truth in Civilization."[7] Fourier's concept of nature could not be accepted if judged from the perspective of contemporary natural science. However, his understanding of the relationship between humans and their environment was beyond the anthropocentric paradigm.

[6] Ibid.
[7] Ibid., p. 283.

For this reason, Walter Benjamin stated, "Fourier's fantasies, which have so often been ridiculed, prove surprisingly sound." [8] Fourier's grand vision "illustrates a kind of labour which, far from exploiting nature, would help her give birth to the creations that now lie dormant in her womb."[9] In Benjamin's sense, Fourier's communism relied on a concept of labour that does not make capital out of nature.[10] From this perspective, Benjamin continued to argue that "the sort of nature that (as Dietzgen puts it) 'exists gratis,' is a complement to the corrupted conception of labour."[11] Here, Benjamin linked Fourier's utopian communism to Joseph Dietzgen's dialectical materialism through their shared concept of nature, i.e., the fundamental condition for the different production arrangements. Fourier's visionary anticipation of anthropogenic climate change proposed an alternative imagination to today's situation. The return of nature shapes the absolute limit of capitalism, and its finitude is where we can bring forth a different way of life beyond the control of society. This project might be in the proliferation of "weak technologies" in opposition to the dominance of mechanical management. I would call this vision planetary cybernetics against global cybernetics.

Since the mathematical concept of cybernetic control first appeared in the 1940s, the most important aspect of modern technology has been its increasing prevalence

[8] Walter Benjamin, "On the Concept of History", in *Selected Writings, Volume 4: 1938-1940*, eds. Howard Eiland and Michael W. Jennings (Cambridge, MA: Harvard University Press, 2003), p. 394.
[9] Ibid.
[10] As for Fourier's communism, I took my definition of his "utopianism" against Engels' emphasis on his theory of the socialist economic system. Following Alain Badiou's communist hypothesis, I intend to reconceptualize communism as an "Idea" or "pure difference" that serves as an absent cause of any emancipatory struggle; in this way, "many communisms" are possible. From some points of view, such as liberal democracy, this affirmation of communism would be regarded as "utopianism" or "messianism," but following *The German Ideology*, I use this term as "the real movement which abolishes the present state of things." In my opinion, Fourier's visionary utopianism, which is about the politics of desire, not about a specific economic system, would give us the insight to rethink the established procedure.
[11] Ibid.

in everyday life. The preliminary investigation has arrived at its pinnacle with the completion of the digital automation of the entire world. By imposing the same regulation on all the many worlds, global cybernetics works toward its goal of creating a unified mechanism. My concept of planetary cybernetics, on the other hand, suggests rebuilding its exercises by retaining geographical or geological experiences. The former uses automation that is driven by algorithms, whereas the latter relies on automatism that is driven by repetition. This alternative constructivism of technology elucidates how it is conceivable for there to be weak technologies. For me, the concept of weak technologies can be drawn as a parallel with Benjamin's one of "a weak messianic power," which will have belonged to impossibility in the present and unrealized potentiality in the past: the virtual. The weak messianic power does not mean messianism without a messiah but instead many possible messiahs — messianism without "one" messiah (multiplicity without oneness). How are many such messiahs possible? Each messiah could be actualized through each experience, and their actualization is the becoming of "a secret agreement between past generations and the present one."[12] As for the concept of planetary cybernetics, my argument proposes a fundamental gap between technological design and its actualization – the gap (or a difference), in which the form of the participated and individuated worldly entities encounter, is a condition for the ontological exercise of weak technologies. As the practice of weak technologies, planetary cybernetics is nothing more than the notion of technological involution against evolution; its exercise is not based on mechanical feedback but on machinic redoubling.

[12] Benjamin, "On the Concept of History," p. 390.

Weak Technologies

In Fourier's naturalism, human activities, i.e., the rise of industrialization, are the primary cause of climate change, and the environmental effects of climate change serve as capitalism's absolute condition. For this reason, the Anthropocene is not only an ecological issue but also a socio-political matter concerning economic transition because the repercussions of the disaster would not be limited to the capitalist mode of production. Even though capitalism is what caused the crisis in the first place, putting an end to that particular economic system is not going to be enough to remedy the problem. The resurgence of nature poses a significant risk to the continued existence of humans. The topic of how human civilization may be maintained in the face of natural disasters features prominently in many debates on the Anthropocene; yet the harsh reality of the consequences of this epoch leaves no place for any answer. Some critics insist that suitable countermeasures, if taken in time, will offer a chance to avoid the worst outcomes. Still, their point of view occasionally reiterates the habitual perception of the relations between humans and nature. This attitude to natural cataclysm and its association with the extinction of humankind might be ascribed to the rigid framework of "modernist science" in Bruno Latour's sense. Benjamin's acclaim of Fourier challenged the modern understanding of nature and suggested another naturalism as the unmitigated edge of capitalist production. In this way, Benjamin overthrew an anthropocentric approach to the Anthropocene beyond Latour's concept of the "common world."

The common world is the opposite of a "world without us," i.e., a universe without any humans. The common world is another world where "we" can manage our future by solving all problems imposed by "the Moderns." In this manner, Latour's cosmopolitics of climatic regime always presupposes those who have never been

modern against the Moderns.[13] These "non-Moderns" bring forth the middle ground of the "diplomatic negotiations."[14] Endorsing Eduardo Kohn's *How Forests Think: An Anthropology beyond the Human*, Latour argues that "it is of extreme interest to negotiate 'how forests think' with the other forest inhabitants – a crucial question for any forest management in the future."[15] However, his theoretical frame does not doubt the habitual dichotomy of the given philosophical propositions – nature vs. humans, universality vs. multiplicity, the Moderns vs. the non-Moderns, etc. His political imagination has deep roots in a belief that the world has already ended. Latour's arguments are unclear about who can come to exist in the common world. He mentions "people bound to the Earth," but the image of those who are perpetually condemned to survive is nothing less than the modernist anti-hero.

Latour calls these people "Earthlings" (*Terriens* in French) who are opposed to "Humans/Moderns" but does not clarify the ontological condition of those who are bound to the Earth. Criticizing Latour's concept of the ex-Moderns, Déborah Danowski and Eduardo Viveiros de Castro claim that those Earthlings (i.e., the People of Gaia) cannot be perceived as "a Majority" or as "the universalization of European good conscience" but "an 'irremediably minor' people, however numerous they may come to be, a people that would never mistake the territory for the Earth."[16] Of course, those people who are missing exist on the one Earth, but the primary language or the modern frame of knowledge has erased their presence. For Latour, the task of cosmopolitics resides in the way in which we (non-Moderns) restore those unknown or unnamed people, but his concept of non-Moderns here reveals its paradox – we

[13] Bruno Latour, "Another Way to Compose the Common World," *HAU: Journal of Ethnographic Theory*, 4 (1): 301-307 (2014), p. 305.
[14] Ibid.
[15] Ibid., p. 306.
[16] Déborah Danowski and Eduardo Viveiros de Castro, *The Ends of the World*, trans. Rodrigo Nunes (Cambridge: Polity, 2017), p. 94.

must have always already been non-Moderns if we recognize those who are anonymous. Those missing people are everywhere but not yet created. As Danowski and Viveiros de Castro maintain, "they probably resemble less the 'phantom public' of Western democracies than the *people that is missing* which Deleuze and Guattari speak of … the people, that is, to come; capable of launching a 'resistance to the present' and thus of creating 'a new earth,' the world to come."

For this reason, what is essential in the climatic regime is the creation of people to come, not the invention of another world as opposed to the current world. The European apocalyptic imagination of the world ending is another obsession to sustain the only world in which they live. But what kind of world will end? Danowski and Viveiros de Castro emphasize that "Latour fails to consider the possibility that the generally small populations and 'relatively weak' technologies of indigenous peoples and so many other sociopolitical minorities of the Earth could become a crucial advantage and resource in a post-catastrophic time, or, if one wishes, in a *permanently* diminished human world."[17] Latour ignores the close relationship between the centre and the margins in the capitalist mode of production. As Danowski and Viveiros de Castro explain, "the overweight, mediatically controlled, psychopharmacological stabilized automata of technologically 'advanced' societies that are highly dependent on a monumental consumption (or rather, waste) of energy" would collapse when we decide to "*scale down*" the existing ways of living.[18] Fourier's cosmic gigantism would be better than Latour's idea of a different scale of socio-technological networks in the regimes of the Moderns and non-Moderns. The Anthropocene indicates a situation in which such magnitudes of scale do not work. Political economy no longer relies on the idea of scale and dimension because of its

[17] Ibid., p, 95.
[18] Ibid., p. 96.

encounter with cosmic entropy. The weak point of Latour's argument invites an interrogation of the possibility of planetary cybernetics. Today's technological networks depend on global cybernetics, and my idea is not about how to reject this technology of control but how to reshape its technological arrangements for an alternative operation – the minor use (or artistic exercise) of technology. This artistic appropriation of technology is nothing less than the practice of "weak technologies."

In control theory, cybernetics is associated with a model that combines monitoring and controlling according to the "feedback" between what is happening on a monitor and what should be happening on a controller. A monitor indicates the eyes, while a controller denotes the brain. When Norbert Wiener first coined the term in 1948, he presupposed "a statistic science" designed by communication engineering in animals and machines.[19] Wiener's theory of control was based on psychopathological observation, which found a similarity between the work of the human brain and mechanical systems. He clarified that "for effective action on the outer world, it is not only essential that we possess good effectors, but that the performance of these effectors is properly monitored back to the central nervous system, and that the readings of these monitors be properly combined with the other information coming in from the sense organs to produce a properly proportioned output to the effectors."[20]

Wiener applied this learning to his argument about computing machines. For him, computing machines are complex systems, "essentially machines for recording numbers, operating with numbers, and giving the result in numerical form."[21] He divided these computing systems into "analogy machines" and "numerical machines."

[19] Norbert Wiener, *Cybernetics or Control and Communication in the Animal and the Machine* (Cambridge, MA: The MIT Press, 2019), p. 16
[20] Ibid., p. 130.
[21] Ibid., p. 159.

The numerical machine (i.e., a digital device), preferable for higher accuracy, is constructed on "the binary scale, in which the number of alternatives presented at each choice is two."[22] Wiener pointed out that "our use of machines on the decimal scale is conditioned merely by the historical accident."[23] However, the computing machine ("a logical machine as well as an arithmetic machine") attains self-fulfilling automatism – the machine must integrate "contingencies in accordance with a systematic algorithm."[24] In my opinion, this algorithmic accomplishment of the automatic system is a central idea in constructing Wiener's concept of cybernetics. Cybernetics functions as a form of automatization by the total computation of data (i.e., the ideal computing machine) and excludes human interference at the end. This perfect establishment of an automatic mechanism means that "not only must the numerical data be inserted at the beginning, but also all the rules for combining them, in the form of instructions covering every situation which may arise in the course of the computation."[25]

In short, the purpose of cybernetic automatization (i.e., algorithm programming) lies in its control of contingencies through setting up a systemic algorithm. This algorithmic formula rests on the dichotomy, "the choice between *yes* and *no*, the choice between being in a class and outside."[26] All the data must be reduced to a set of choices between two options, and all the manipulation to make a new set of choices will be subject to a group of given choices. Any contingency that may occur in the mechanical operations requires a new set of options between 1 and 0 in line with an established set of rules on the former decisions. In this manner, Wiener is convinced that "the reasons for its superiority to other systems are of the same

[22] Ibid., p. 161.
[23] Ibid.
[24] Ibid.
[25] Ibid., p. 162.
[26] Ibid.

nature as the reasons for the superiority of the binary arithmetic over other arithmetics."[27] This optimistic rationalism would be ostensibly removed from its early mood in his cybernetic manifesto, *The Human Use of Human Being*, which proposed to serve as an antidote to the danger of technology's self-destructive potentiality. In the following work, Wiener explained "the potentialities of the machine in fields which up to now have been taken to be purely human" and warned against "the dangers of a purely selfish exploitation of these possibilities in a world in which to human beings, human things are all-important."[28] It is not humans who control the machines, but rather, "we shall have to change many details of our mode of life in the face of the new machines."[29]

The Idea of Apocalyptic Annihilation

Wiener's concept of cybernetics presupposed the technological modification of human behaviours and the post-human approach to human beings. There is no fundamental difference between humans and other animals. The definition of the mortal as an animal with a soul cannot scientifically distinguish human beings from other species. Therefore, the concept of cybernetics is precisely the post-human arrangement of the relationship between humans and machines and, further, between devices and machines. From this perspective, Wiener regarded messages and communication facilities (i.e., media) as the subject matter of a scientific inquiry to understand society. In this way, the operation of individual humans can be

[27] Ibid.
[28] Norbert Wiener, *The Human Use of Human Beings: Cybernetics and Society* (Boston: Houghton Mifflin, 1950), p. 2.
[29] Ibid.

identified with the process of the communication machines in that both take sensory receptors as an early stage of their operations. According to Wiener, "in both of them, there exists a special apparatus for collecting information from the outer world at low energy levels and for making it available in the operation of the individual or of the machine."[30] This parallelism between humans and machines gives rise to the tragic consequence of cybernetics. The first sensory impression is not instantly transmitted into the information but transformed into a new form usable for the next stage of performance through fundamental modulation. This procedure shows that any animal or any machine lays hold of this functioning by their responses to stimuli from the outer world. In short, "their *performed* action on the outer world, and not merely their *intended* action, is reported back to the central regulatory apparatus."[31] Wiener pointed out that this complexity of human behaviour was not included in the customary analysis of society.

What must be stressed here is that Wiener emphasized this cybernetic aspect of society for rejecting "the ideal of society which is held by many Fascists, Strong Men in Business, and Government," and his concept of cybernetics was a geopolitical agenda against "great dangers in the totalitarian system of Communism" and "a fortuitous resemblance to Communistic institutions" in those days.[32] The American mathematician made it clear that his purpose was to protest the inhuman use of human beings. However, this ethical argument buried more complicated geopolitics beneath his technical discussion of cybernetics. To quote him,

> It is a degradation to a human being to chain him to an oar and use him as a source of power; but it is an almost equal degradation to assign him a purely

[30] Ibid., p. 15.
[31] Ibid.
[32] Ibid., p. 229.

> repetitive task in a factory, which demands less than a millionth of his brain capacity. It is simpler to organize a factory or galley which uses individual human beings for a trivial fraction of their worth than it is to provide a world in which they can grow to their full stature. Those who suffer from a power complex find the mechanization of man a simple way to realize their ambitions. I say, that this easy path to power is in fact not only a rejection of everything that I consider to be of moral worth in the human race, but also a rejection of our now very tenuous opportunities for a considerable period of human survival.[33]

The threat to human survival when Wiener marked the turning point in his theory of cybernetics was the development of atomic bombs in both the US and the USSR. After the dramatic end of the Second World War with the deployment of the first nuclear bombs by the US on Japan, the USSR succeeded in developing nuclear weapons of its own. Wiener regarded the invention of atomic weapons as the apocalyptic signal of human civilization – the most significant danger to the continuance of the human species. Wiener ascribed the crisis to mindless people's ignorance, arguing that "the effect of atomic energy on mankind and the future is yet to be assessed, although many stupid people of the present day assess it merely as a new weapon like all older weapons."[34] The advent of the nuke brought forth a different circumstance from other technological inventions such as the steam engines, the locomotive, the telegraph, electricity, etc. However, "the feelings of universal fear and of universal guilt" did not enlighten the public, and "there is scarcely anyone who does not realize that the atomic bomb threatens him with the possibility of personal extinction."[35] In the new scientific era, the writer described

[33] Ibid., p. 16.
[34] Ibid., p. 174.
[35] Ibid., p. 215.

himself as "the position of the mouse who advised the other mice to bell the cat."[36] His point was that the atomic power would destroy its creators if "humans" failed to control it, but those "humans" who must be defended from the imperilment did not include other lives in another world.

In a similar mood but more focused on the crisis of human survival beyond political divisions, Günther Anders also raised the point of imminent endangerment in the nuclear age. Unlike Wiener, Anders considered the human species to be divided by "*un genre mortel*": culprits and victims.[37] In this sense, "atomic suicide" or "the suicide of humanity" misled the deceptive implication that this "suicide" is associated with the hope of power balance. The "suicide" presupposed a crime in that one group eliminated another, like in the atomic bombing of Hiroshima and Nagasaki. Anders recognized the term "humanity" could not embrace the whole of humankind. The duality of the culprits and the victims was irreconcilable. The atomic technology for destruction is not "suicide" but combat by which one group attempts to murder another. Therefore, this cruel process does not allow any reasonable solution to the crisis. Anders relied on the dialectical relationship between "fission" and "fusion," by which "the effect of nuclear war will no longer uphold any trace of duality."[38] In his letter to Claude Eatherly, a pilot involved in the Hiroshima bombing, Anders clarified that "the idea that atomic weapons could be brought into play tactically presupposes the concept of a political situation which exists independently of and apart from the fact of atomic weapons."[39] His point is that the atomic weapons were not the consequence of the political situation; rather, the political decision to drop the bombs

[36] Ibid., p. 216.
[37] Günther Anders, *Le Temps de la Fin* (Paris : L'Herne, 2007), p. 33.
[38] Ibid., p. 79.
[39] Günther Anders and Claude Eatherly, *Burning Conscience* (New York: Monthly Review Press, 1962), p. 16.

was the outcome of the nuclear age. In other words, there might have been no atomic bombing if there had been no nuclear technology. Anders argued:

> It is *not* the atomic weapons which 'also' occur within the political scene; but, on the contrary, it is the *individual events* which are taking place *within the atomic situation*: and most political actions are steps within that situation. The attempts to make use of the possible end of the world as a pawn amongst pawns in the political chess game are, whether artful or not, signs of blindness. The time for artfulness is past. Therefore it should be your principle: sabotage all discussions in which people are trying to deal with the fact of the atomic menace from an exclusively tactical viewpoint; and therefore, make it your rule to channel the discussion into the only valid direction – the menace mankind has hung over its own head by creating its own Apocalypse – and do that even if you run the risk to become a 'laughing stock' and to be derided as politically immature and unrealistic.[40]

For him, the arrival of atomic weapons marked a fundamentally different stage of humanity from what had come before – politics could not deal with technological power. According to Anders, those who insisted on the tactical use of nuclear weapons "fail to grasp that the ends which they allege to seek are being forfeited by the very use of their means."[41] This perspective of the apocalyptic annihilation of humankind can be a compelling critique of Wiener's limited understanding of technology. Still, his dark vision of the atomic age, an idea that technological disaster is inherent within its instrumental development, remains today. Regardless of the

[40] Ibid., p. 17.
[41] Ibid.

principal difference between their approaches to the meaning of humankind, Wiener and Anders shared a belief that ethical decisions could change the dangerous situations caused by the universal use of technology.

What is more critical at this juncture is not determining who will choose or how decisions will be made. Even though Anders was aware of the incapacity of humanity to deal with the nuclear tragedy, he was unable to deny the idea of an ethical calling. This dilemma brings out the ontological paradox of human beings – the wholeness of humankind can be accomplished by their irresistible annihilation. Like the doctrine of Judgement Day, the coming of the atomic apocalypse plays the role of absolute negativity against human existence. This paradox is not a solution to the problem but a way of positing it. The two thinkers' anthropocentric concept of technology misleads the understanding of the relationship between technological developments and humans (or nonhumans), as Latour does in his theoretical frame. The misguided confusion is also found in some discussions of automatization, such as Bernard Stiegler's.

Toward Planetary Cybernetics

Stiegler's analyses of "automatic society" reference Gilles Deleuze's concept of "control society"; however, Stiegler criticizes Deleuze's understanding of control as modulation. He argues that "in the hyper-industrial stage, *hyper-control* is established through a process of generalized automatization."[42] Stiegler emphasizes the hyper-control of automatic society against the modulation of control society. What

[42] Bernard Siegler, "Automatic society, Londres février 2015," trans. Daniel Ross, *Journal of Visual Art Practice*, Vol. 15, Nos. 2-3 (2016), p. 196.

distinguishes between the two types of control is "digital tertiary retention," which is the operator of "proletarianization" and makes "a short circuit of the noetic faculties of theorization and deliberation."[43] The digital tertiary retention is parallel to the analogue tertiary retention in the twentieth century, which was the operator of proletarianization of *savoir-vivre*, and the mechanical tertiary retention in the nineteenth century, which was the operator of proletarianization of *savoir-faire*. Following these two stages, digital tertiary retention is the third stage of proletarianization, i.e., automatization – the loss of *savoirs théoriques*.

For Stiegler, this digital automatism is an unthinkable development, fundamentally different from Deleuze's analysis of control society. In automatic society, according to him, "control undertakes the mechanical liquidation of discernment."[44] What is at stake here is that discernment, which Stiegler regards as the Kantian concept of understanding, is automatized as "a*nalytical* power that has been delegated to algorithms."[45] Stiegler declares that algorithmic automation determines knowledge through sensors outside of any intuition or experience. Endorsing Husserl's concept of retention, Stiegler postulates tertiary retention, which modifies the relations between primary retentions, psychic retention of perception, and secondary retention, psychic retention of memory. In his sense, the new method of retention is "artificially retaining something through the material and spatial copying of a mnesic and temporal element."[46] To some point, tertiary retention is necessary for the construction of society through the process of *transindividuation*. Still, Stiegler claims that the rise of digital technology short-circuits the collective secondary retention and protention, i.e., the possibility of expectation.

[43] Ibid.
[44] Ibid., p. 194.
[45] Ibid.
[46] Ibid., p. 197.

What is interesting in Stiegler's argument is his emphasis on the link between tertiary retention and proletarianization – the technical retention is always *pharmakon* – toxic, at the same time, medicine, which requires a particular therapeutic prescription. Therefore, digital automation is a new *pharmakon*, causing the latest stage of proletarianization. What are these therapeutics for any toxic *pharmakon*? Stiegler points out the attainment of new knowledge through "the *second moment of the technological shock* that is always provoked whenever a new form of tertiary retention appears."[47] According to Stiegler, this second moment is equivalent to the phenomenological *epoché*, and then the hyper-control technology, whose only component is big data, is constantly disintegrating its redoubling. From this perspective, Stiegler draws a thick line between his concept of hyper-control society and Deleuze's concept of control society by presupposing a qualitative difference between automatization and modulation. He argues:

> The hyper-industrial situation takes what Deleuze called societies of control, founded on modulation by the mass media, to a stage of hyper-control generated by self-produced personal data, self-collected and self-published by people themselves – whether knowingly or otherwise – and exploited by applying high-performance computing to these massive data-sets.[48]

The algorithmic governmentality of the Internet rules the hyper-control society. For Stiegler, digital technology unifies all different automatisms. The distinctive aspect of its unification is that "it allows articulations between all these automatisms: technological, social, psychic and biological – and this is the main point of neuro-

[47] Ibid., p. 198.
[48] Ibid., p. 200.

marketing and neuroeconomics."[49] Stiegler bemoans this automatized disintegration and tries to suggest an alternative to "total robotization." Here, he criticizes Deleuze's strategy for resistance, i.e., to invent the art of control. For Deleuze, the invention of art (the different use of technology) is the inverting of control. However, unlike Deleuze, who describes the invention as resistance, Stiegler regards it as technological categorization and argues that a therapeutic for digital *pharmakon* would emerge from a new history of art, new individuation of art, by which art should become *ars* again. In my opinion, this criticism reveals the theoretical problem of his perspective on automation. Stiegler insists that the invention of *ars* is an epistemological transition from fact to law, but Deleuze's concept of artistic invention designates ontological becoming out of technological generalization. Stiegler's discussion of automation is too phenomenological and ultimately leads to technological determinism. He argues that digital automatization is the essential cause of proletarianization, but his conceptualization of the connection between automatization and proletarianization fails to provide us with solid ground.

In "Automation and the Future of Work," an essay that attacks automation discourse, Aaron Benanav explains the fact that "the decline in the demand for labour is due not to an unprecedented leap in technological innovation, but to ongoing technical change in an environment of deepening *economic stagnation*."[50] Contrary to Stiegler's assumption, what gives rise to proletarianization is not digital automation but the crisis of capitalist accumulation. Stiegler's understanding of automatization shares a similar idea with Martin Heidegger's definition of technology as the form of knowledge. It seems that Deleuze's position, rather than Stiegler's opinion, is a more practical approach to societies of control. Deleuze's conceptualization of art as the

[49] Ibid.
[50] Aaron Benanav, "Automation and the Future of Work –1," *New Left Review*, 19 (Sept/Oct 2019), p. 15.

different use of technology (i.e., weak technologies) against algorithmic automation must be radically reconstructed. As Danowski and Viveiros de Castro show in their argument, Deleuze's concept of minor technologies, i.e., the different exercise of techniques (or "techopoetics"), paves a possible way toward constructing planetary cybernetics. Heidegger regards technology as "the historiology of nature," while historiology is "the technology of history." [51] Historiology (*Historie*) conceals history (*Geschichte*); in other words, technology is becoming "the form of the 'knowledge' of any being whatsoever," including the possession of the historiology of history.[52] Technology is expanding into "the basic form of the relation to beings."[53] Endorsing Danowski and Viveiros de Castro's adaptation of Deleuze, my proposition of planetary cybernetics would challenge the Heideggerian critique of technology as the retreat of the historical essence. There might be many different technologies in its geographical or geological actualization, and those virtual exercises of planetary cybernetics have no such meaning of history but belong to the production of "people to come." In this sense, my formulation of planetary cybernetics is about a conception to substitute new political philosophy for political economy.

[51] Martin Heidegger, *Ponderings VII-XI: Black Notebooks 1938-1939*, trans. Richard Rojcewicz (Indianapolis: Indiana University Press, 2017), p. 273.
[52] Ibid., p. 102.
[53] Ibid.