

ON THE HUMAN CONTROL OF THE WORLD ACCORDING TO SCIENCE IN THE PRESENT TECHNOLOGICAL SOCIETY

Ana BAZAC¹

ana_bazac@hotmail.com

Abstract. In today's context, the title implies taking the pandemic as the proof of the weak / at least disputable capacity of humans to control the world. However, as the pandemic as such is not a simple biological phenomenon but a social-biological one, so the above implication is false because the humans do not constitute a homogenous entity in front of nature / the pandemic. The multiple social divisions explain both that the responsibility for the creation of the pandemic is not the same for all humans (and was not, even much before the pandemic), and that the consequences of the pandemic are not equally endured by all (and they have never been, even much before the pandemic), and nor is the problem of control of the world tackled in the same manner by all.

Actually, the paper only sketches an investigation of the human control of the world rather echoing the *coexistence* of human brittleness with the societal conditions that weaken or strengthen / even create it.

The reason of this sketch is that the control is the *intentional* aspect of human activities – and for humans this intentional aspect is related to *values*, and not only to adaptations made by the “machine structure” of life itself – and thus the *direct* results of the human intentions can be confronted with their *broader* and *indirect* consequences. And, because this relationship is mediated by *knowledge*, more precisely by science, the contradictions between various types of intentions and the present visible results of their consequent actions deny the festive image from different origins about the incontestable progress in the human control of the world.

In this sense, the point is that *fragmented* advances in science and technology – regardless of the general use of their application – do not converge towards unitary, coherent and effective control of the world and even less towards human control.

The capacity to *control* the world and the state of *fragility* of humans are mutual *criteria*, inasmuch as they depend on the class and community membership of the individual. The *dialectic* of the individual's-community's-species' control in the world is highlighted. What does control mean – much beyond the well-known discussions about the original meanings of (the word) cybernetics – and what does human control mean are questions that the paper only opens.

If some aspects of the style could suggest a “manifesto” highlighting a rough attitude towards the correlations analysed by the scientific research of the human-nature and human-human relationships it is because of the moment of *world emergency* challenging the solving of the contradictions which are not new but have entered the phase of uncontrollable storm. Generally, all the manifestos were based on the authors' belief that they responded to unique moments in the human history. The present article, contributing to the scientific demonstrations about the above relationships and the conditions of solving them, shows one of the conclusions of these demonstrations as feature of the present moment: that there is no longer time and space for further deploying the cognitive and social model that does not control the world emergency.

Keywords: control, world, pre-human living beings, human species, community, individual, knowledge, science, technology, values, nature, society, information, energy, vulnerability / fragility, stimulants.

Rezumat. În acest moment, titlul subînțelege pandemia ca dovadă a capacității slabe / cel puțin discutabile a oamenilor de a controla lumea. Totuși, așa cum pandemia ca atare nu este un simplu fenomen biologic, ci unul social-biologic, la fel implicația de mai sus este falsă, deoarece oamenii nu constituie o entitate omogenă în fața naturii / pandemiei. Diviziunile sociale multiple explică atât faptul că responsabilitatea pentru crearea pandemiei nu este aceeași pentru toți oamenii (și nu a fost, chiar cu mult

¹ Professor, Division of Logic, Methodology and Philosophy of Science, Romanian Committee of History and Philosophy of Science and Technology, Romanian Academy.

înainte de pandemie), că urmările pandemiei nu sunt suportate de toți în mod egal (și nu au fost, chiar cu mult înainte de pandemie) și nici că problema controlului lumii este abordată în același mod de către toți.

De fapt, lucrarea doar schițează o investigație a controlului uman asupra lumii, mai degrabă ecou al coexistenței fragilității umane și a condițiilor societale care o slăbesc sau întăresc / o creează.

Controlul este aspectul *intențional* – iar în cel uman acest intențional este legat de *valori* și nu numai de adaptările făcute de „structura mașină” a vieții în sine – și astfel rezultatele *directe* ale intențiilor umane pot fi puse față în față cu urmările lor mai largi și *indirecte*. Acesta este motivul acestei schițe. Și, deoarece relația este mediată de cunoaștere, mai precis de știință, contradicțiile dintre diferitele tipuri de intenții și rezultatele vizibile prezente dezminț imaginea festivă din diferite origini cu privire la progresul incontestabil în controlul uman al lumii.

În acest sens, se arată că progresele fragmentare în știință și tehnologie – indiferent de utilizarea generală a aplicațiilor lor – nu converg către controlul unitar, coerent și eficient al lumii și mai puțin spre un control uman.

Capacitatea de a *controla* lumea și starea de *fragilitate* a oamenilor sunt *criterii* reciproce, întrucât depind de clasa și de apartenența la comunitate a individului. Se evidențiază dialectica procesului de control de către individ-colectivitate-specie. Ce înseamnă controlul – mult dincolo de discuțiile bine cunoscute despre semnificațiile originale ale (cuvântului) ciberneticii – și ce înseamnă controlul uman sunt întrebări doar deschise în lucrare.

Dacă unele aspecte ale stilului ar putea sugera un „manifest” care evidențiază o atitudine aspră față de corelațiile analizate de cercetarea științifică a relațiilor om-natură și om-om, este din cauza momentului de *urgență mondială* care provoacă soluționarea contradicțiilor: care nu sunt noi, dar au intrat în faza furtunii incontrollable. În general, toate manifestele s-au bazat pe credința autorilor că au răspuns la momente unice din istoria umană. Prezentul articol, contribuind la demonstrațiile științifice despre relațiile de mai sus și condițiile de soluționare a acestora, arată una dintre concluziile acestor demonstrații drept caracteristică a momentului prezent: că nu mai există timp și spațiu pentru desfășurarea în continuare a modelului cognitiv și social care nu controlează situația de urgență mondială.

Cuvinte-cheie: control, lume, ființe vii preumane, specia umană, comunitate, individ, cunoaștere, știință, tehnologie, valori, natură, societate, informație, energie, vulnerabilitate / fragilitate, stimulente.

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1. Prolegomena

This is not a study deploying crescendo the topic starting from the concepts, then the theories and their reasoning, their unbiased criticism, all of them around the hypothesis / hypotheses promoted by the study and thus emphasizing the point and, finally, the conclusion. The reason of the sketch is *to raise the problem* of the *scientific* view – i.e. coherent rational thinking based on the questioning of premises and the inquiring of every element of a theory – on the human control of the world.

Actually, the human control over everything that was targeted by humans was/is the ultimate *reason to be* of knowledge and activities. The concept ((human) control) was implied within, even though it was dissimulated by, particular “technical” ends whose fragmentation increased the distance between the particular / local / casual reasons and their ultimate *integrated* final reason. Accordingly, the manners people aimed to particular ends – or controls – have corresponded to their different *orders of thinking*. The philosophers were interested just to understand – and deconstruct – the different orders of thoughts (inferences, contents, forms), while their historical professional deformation has led to the pattern of their own thinking / method of approaching the world: they saw the world as they saw the thoughts and ideas and they either deduced the world from their own or others’ ideas, or they endeavoured to show the matching between the world and ideas. At the same time, the philosophers wondered about the worldly structures which condition the ideas and their orders, but the therapies they prescribed / the theories they forged *were determined by the above pattern*. In fact, they considered the humans and their ends according to the *criterion* of their own image about the human beings: where *they* were the prototype of the human beings, and the aspects which did not fit to the prototypical life, feelings and ideas were simply excluded from the model of their reasonable order of thinking; *excluded and silenced*; or in the best case, considered as *accidents* with no connection to structural relations, but to the goals of “traffickers”² or of the “corrupted” public officials.

Let’s give the examples of:

- export of waste, even of hazardous waste, by companies supported by their own states’ pressures over weaker states (with rapacious public servants);
- or the examples of warfare phenomena *different* from the *assumed* laws of war;
- or of the anathema on the civil servants but not on the private companies that took advantage of their corruption;
- or of the prison labour considered as directly and indirectly profitable, pressing on the lowering of free persons’ salaries, and used in dangerous activities but the inmates’ abilities of firemen, for instance, gained during their work not being recognised once they are released³;
- or the examples of *prostitution as profitable* activity⁴ of “sex workers”;
- or the examples of *domestic workers exploitation*, even by excluding them from the safety (including minimum wage) protection laws⁵, all the more so because of their immigration status⁶, but even without excluding them and even excluding the immigration status;
- or the examples of guest workers for picking the harvests in developed countries because despite all the unemployment, the owners do not employ domestic labour force for it would be too expensive and less productive⁷;

² See *What is Modern Slavery?*, <https://www.state.gov/what-is-modern-slavery/>.

³ *US Media Can’t Think How to Fight Fires Without \$1-an-Hour Prison Labor*, August 25, 2020, <https://fair.org/home/us-media-cant-think-how-to-fight-fires-without-1-an-hour-prison-labor/#https://fair.org/home/us-media-cant-think-how-to-fight-fires-without-1-an-hour-prison-labor/>.

⁴ Eurostat, *Handbook on the compilation of statistics on illegal economic activities in national accounts and balance of payments*, 2018 edition, <https://ec.europa.eu/eurostat/documents/3859598/8714610/KS-05-17-202-EN-N.pdf/eaf638df-17dc-47a1-9ab7-fe68476100ec>, p.18, defines the IEA as “illegal actions that have the characteristics of a transaction... transactions only when the institutional units involved enter into them by mutual agreement” (as prostitution and production of drugs).

⁵ Institute for Policy Studies, *The Human Trafficking Of Domestic Workers In The United States: Findings from the Beyond Survival Campaign*, 2017, pdf., p. 8.

⁶ Institute for Policy Studies, *Notes from the Storm: Black Immigrant Domestic Workers in the Time of Covid-19*, Survey May 19-June 6, 2020, pdf.

⁷ *Inexperienced workers make for a difficult harvest*, https://www.economist.com/britain/2020/08/13/inexperienced-workers-make-for-a-difficult-harvest?utm_source=headtopics&utm_medium=news&utm_campaign=2020-08-17.

- or, continuing the previous, the examples of cohorts of young people in the same developed countries, having casual jobs, being used to not do something with exertion but to consume, although rather artificial substitutes, and to search for entertainment, including “that” of the *lumpen-proletarians*’ function to produce disorder and chaos in order to divert the actions of social protests and the search for constructive alternatives.

Therefore, the *reason to be* of knowledge is the human control of the world, the conscious and intelligent use of knowledge in order to understand the world and make it propitious for life and for the humans’ worthwhile life. In this relation, the starting point is knowledge, developing according to the mentioned reason. First, knowledge must develop, because otherwise there is no control of the world. Thus, the relation is not two-way: if one starts from the control, this means that knowledge is controlled and then the problem is what is the reason to be of the control, in fact, who is giving the reason to be of the control; who does controlling the world.

And what is the state of the human knowledge when it is controlled by restrictive interests subordinating everything to the restrictive control? An interesting aspect was highlighted, throwing a light on both the state of knowledge and the knowing subjects. The aspect was described with the term *proletarianization* (in fact, transformation of the humans in more vulnerable beings since and when they are deprived of knowledge), meaning *deprivation of knowledge*⁸.

How can we accept this term/this intellectualised meaning of the famous (“but old”) Marxian concept focused on the structural vulnerability of workers obliged to sell their labour power because they do not control the means of production, since we are accustomed to think that as time went on, people got to know more and better? Well, we should once more remind the *asymmetrical* character of the human control because of power relations/domination-submission relations. Just because the control is one-way – from the dominant layers to the world, including knowledge – i.e. private, it rules both knowledge and the other humans (which are producers and consumers of objects produced in private regime).

Two observations must be made here.

One is related to the traditional / mainstream representation of the *industrial way of production* /the technological revolution generating technological devices seeming to become autonomous *from the humans who made them*⁹ and that could be considered autonomous from the humans in general because it would consist only in its own endogenous development (creation of technology that would expand autonomously technology) and thus, that technology would control the world. Accordingly, the *cognitive proletarianization* (knowledge deprivation) of the First Industrial Revolution’s workers would be exclusively the result of machines which have substituted many movements/functions of workers, transforming them into *machine serving labour* force. Their previous ability to construct objects in their entirety, from the beginning moments of conception/design to end, was simply, “naturally”, no longer necessary; that knowledge has disappeared from the mind of workers, they becoming proletarians – thus forced to sell their labour power – on two interdependent levels, economic and cognitive. But if we do not forget the social (capitalist) frame and reason to be of the First Industrial Revolution (the maximization of profit

⁸ Bernard Stiegler, *The Neganthropocene*, Edited, translated and with an introduction by Daniel Ross, London, Open Humanities Press, 2018, pp. 46, 51-52, 126,135, 139-141.

⁹ This emphasis is very important. Indeed, though we are used to think that the relationship would be between technology and all humans – all feeling in the same manner their powerlessness in front of the artifacts which would dominate and shape them – actually, the relationship is as asymmetrical as the power relations are. Those who control the power relations, the means of production and the resources of life are those who impose technology and its power: from the industrial production that abolished the artisanal production capacity and knowledge to the armament.

through the development of fixed capital), we arrive to question both the autonomy and strict endogenous generation of technology *and* the “knowledge of the consumer” that was given to those deprived workers and to the working population, as a capitalist “compensation” for their lost knowledge. This new type of consumption knowledge was imbued with the ideas that supported the fragmentation of the world (including by the world war) in the name of preserving the “values” of this consumption.

And obviously, when we discuss the other Industrial Revolutions, including the present one and the prepared Fourth one¹⁰, we grasp more clearly that technology (the present big data, for instance) is not autonomous from the human forces that control it.

The second remark concerns Stiegler’s idea that the deprivation of knowledge would be the objective result of the “exteriorisation of knowledge”¹¹, namely, since knowledge is transmitted, it would show a process of deprivation (*but also of adding*, I would mention, as Socrates has long ago shown). However, the proof given by IT shows that the transmission of knowledge does not lead to the depletion of knowledge, thus to the deprivation of knowledge¹²; rather, only the *goals* and the *contents* of transmitted knowledge may generate a depleted knowledge and thus, the deprivation of knowledge. But the necessity to be more prudent in making philosophical generalisations is not based only on present empirical proofs. The above theory of Stiegler is similar to the old Hegelian thesis that alienation would be objective because it would consist in the creation of the object by the subject, thus in the exteriorisation of the subject (that would not recognise itself in the object). Nevertheless, the subject-object difference, the process of the understanding of the object, are not tantamount to alienation. The latter concept points not a simple difference, but the *opposition* of the object to the subject and thus the subject’s feeling that the object would be adverse to him. And these opposition and feeling *are not the result of the human creation*, but the following of hostile interhuman relations where the objects are used in these relations as “mediators” for the domination and for the cruel irrationality of its manifestations.

There were not the scientific discoveries on the basis of which the A bomb was created those which have produced alienation to their creators: on the contrary, they were proud of their discoveries considered to be major breakthroughs in the history of the human knowing. But the A bomb was considered an undesirable, malignant objectification of their discoveries. In like manner, when those who control the creation of technology issue a new theory – further taken over by some engineers deprived of the critical view of tackling the ideologies¹³ – and that technology as such would be the end/purpose and its creation and application would be the criterion of progress, they simply substitute the value with the instruments (and technology is only instrument): they think that the value is given by the technology itself, ignoring the human reasons to be, the human values. They substitute the human reason with the narrow calculative rationality of immediate gains.

¹⁰ While the most praised Klaus Schwab, *The Fourth Industrial Revolution*, WEF, Genève, 2016 insists on technologies related to consumption, Jeremy Rifkin, *The Third Industrial Revolution: How Lateral Power Is Transforming Energy, the Economy, and the World*, Palgrave Macmillan, 2011 is oriented on ecological production.

¹¹ Bernard Stiegler, *The Neganthropocene*, p. 46.

¹² On the contrary: the transmission of knowledge develops it because it takes place between different cultural areas where the received knowledge is “adapted”, even transformed but anyhow enriched with the new meanings (see George Gheverghese Joseph, “The Enormity of Zero”, *Revista Brasileira de História da Matemática* - Vol. 2 no 4 (outubro/2002- março/2003) - pág.155 – 167, Publicação Oficial da Sociedade Brasileira de História da Matemática).

¹³ By not seeing the consumerist use of the state-of-the-art technology and the private control / domination of this technology – on the contrary, by ignoring these aspects – these engineers seem to take over the status of the “cheerful robots” enjoying the use of the devices which have the above-mentioned functions, mentioned long before by John Stuart Mills, *The Sociological Imagination*, New York, Oxford Press, 1959, pp. 170-175.

The definitions – and especially of the concepts used here – are designed and elaborated *from the viewpoint* of the living beings /more precisely, from a justified anthropocentric view, of the humans, because they are those who give the *meanings* of things. The paper points the two concepts in the following manner.

The *world* – is the milieu of the living beings as *species*, and of *every* living being according to its “life-world” experience. The *contents* of the concept are historical, not only from the standpoint of phylogeny but also of ontogeny. Clearer, the world is for the living being its *exterior* surroundings and, as it learns from its experience in the surroundings, the world it develops: in this respect, it is that who “creates” the world/the meanings towards which it reacts.

The *control* – is the living being’s action and ability to act on the environment (the world) in order to adapt/adjust it to its needs. If so, first of all the control is *endogenously* configured and, as we shall see, it is inherent even to the biochemical entities within the living being’s body. It is – and leaving aside how would the consciousness be defined – *as if* both the biochemical entities and the living being as such would have this consciousness. However, for the individual non-human living being the control of the external milieu is based on reactive movements, irrespective of the complexity of the milieu and the learning experience, i.e. on the form of *instinctually circumscribed reactions*; even though the new experiences may transpose into epigenetically constituted changes.

Therefore, a short historical reminding of the constitution of human control will help us to come nearer to its meanings.

The *non-human* living beings do not control the world and not even their surroundings. They simply *react* to the external conditions either by transforming them into useful stimuli or by avoiding them in different ways. When the non-human living beings transform the external conditions into useful stimuli for them they certainly *transform* those conditions: but just similarly to the inorganic matter and the physical phenomena that move and transform the physical appearance of the world. And though at least in the new millennium interesting multidisciplinary scientific inquiries about the electrical-chemical-informational basis of the non-human living beings and constitutive entities took place, for example showing the “sentient” quality of protein molecules which purposefully change their conformation to allow in and out ions, or which change following the ligatures with other molecules¹⁴; or showing the intelligence of plants individual learning throughout ontogeny from their relations in order to adapt, to change and transmit the genes, to make decisions/select actions in the interaction with their surroundings, to anticipate the resources and to communicate, and thus possibly to associate (and dissociate)¹⁵; or that there were even transpositions of the above processes as “control” processes according to information related to the environment purpose¹⁶; in fact, *all of these are not based on values* – on ideal goals and formulations, sometimes even transcending and opposing the direct purposes – but are only adaptive processes in order to survive *and in as good condition as possible*. Moreover, there is a

¹⁴ See Ladislav Kováč, “Life, chemistry and cognition: Conceiving life as knowledge embodied in sentient chemical systems might provide new insights into the nature of cognition”, *Embo Reports*, 2006, June, 7 (6), pp. 562-566.

¹⁵ Paco Calvo, “The Philosophy of Plant Neurobiology: A Manifesto”, 2016, Minimal Intelligence Lab, University of Murcia; Paco Calvo and Karl Friston, “Predicting green: really radical (plant) predictive processing”, *Journal of Royal Society. Interface*, 14, 2017, <http://dx.doi.org/10.1098/rsif.2017.0096>; Paco Calvo, Monica Gagliano, Gustavo M. Souza, Anthony Trewavas, “Plants are intelligent, here’s how”, *Annals of Botany*, October 2019, DOI: 10.1093/aob/mcz155/5575979.

¹⁶ P. Adam Frazier, Lorenzo Jamone, Kaspar Althoefer, and Paco Calvo, “Plant Bioinspired Ecological Robotics”, *Frontiers in Robotics and AI*, Volume 7, July 2020, doi: 10.3389/frobt.2020.00079.

difference between the individual purpose and the world transformed as a result of this purpose and, on the other hand, the *clear decision to transform the world* according to ends accepted or not by the species but *debated* and *expressed*.

The *human* beings, too, started by reacting to the environment. But they succeeded to react efficiently with the development of *knowledge* – ability to *represent*, to *anticipate*, to *prevent*, to *imagine* alternatives and to *understand* the *why* of things, thus to construct *ideal goals as criteria and stimuli* for the ideas and actions. (And certainly, the development of knowledge intertwined with the development of sociability and transformative action/tool making¹⁷).

Did they control the world through their clever reactions? *On the one hand*, the answer is negative. There was no control when they were hunters and gatherers, and nor even when they began to tame animals as sure sources of matter and energy for their life. The economy of hunters-gatherers and shepherd communities was absolutely *extensive*, namely they *migrated* along the continents when the local resources they searched for were consumed or with their herds as the grazing lands were depleted. We can consider the big waves of transcontinental migrations, causing the resilience and viability of humanoids and humans, as signs of their lack of control over the world, meaning a kind of *continuity* of their non-human origin. *On the other hand*, the processing of natural objects as *tools* – artificial objects aimed at enhancing the reactive ability of humans – as well as the anticipative thinking in a pessimistic key¹⁸ (and not in a festive utilitarian one, as the modern economics has considered) was the sign of the beginning of the control of the world.

The control increased with the sedentarization – in different forms – of human communities. When the ancient irrigation systems, hydraulic engineering (levees, canals, dams and reservoirs) were created, they showed that the human beings began to control parts of their milieu. This control is thus the development of tools production, now the surpassing of *mobile* tools creation and the construction of *immobile* artificial structures serving *communities* and for long-term. Briefly, the development of tools production was the creation by the human species of a “second” soma for each member of the species: an exosomatisation/”exosomatic organogenesis”¹⁹ that gives to humans the feature of a unique power of control, but at the same time it is developed in a way that can be overcome only by a new kind of utilising the human reason.

Anyway, in a synthetic view, one may retain the two aspects – of *reaction-adaptation* and *control* – of the life processes. The first is specific to all the living beings and involves “machine”-like settings and behaviours in all the living systems of the living²⁰ beings, irrespective of the specific processes (not yet known/known enough)²¹ which show the link to humans/the *continuity*

¹⁷ “Economic specialisation in traditional aboriginal communities was minimal. Most adults were able to perform any of the subsistence tasks done by others in the group. Division of labour was primarily based on gender: men hunted large game; women gathered small ground re tiles and other animals as well as vegetables. In coastal and riverine areas both men and women fished and gathered shell-fish. For technological reasons, extensive food storage was not possible, which meant that most food, once obtained, had to be consumed immediately. Because of this and because of the nature of aboriginal kinship obligations, sharing was a major and defining ethos of the culture. To be human was to share“, Peter Sutton, Christopher Anderson (Eds.) with the contributions of Philip Jones, Françoise Dussart, Stephen Hemming, *Dreamings: The Art of Aboriginal Australia*, Viking, 1989, p 7.

¹⁸ Michael Holton Price and James Holland Jones, “Fitness-maximizers employ pessimistic probability weighting for decisions under risk”, *Evolutionary Human Sciences* (2020), 2, e28, pp. 1016, doi:10.1017/ehs.2020.28.

¹⁹ Bernard Stiegler, *The Neganthropocene*, Edited, translated and with an introduction by Daniel Ross, London, Open Humanities Press, 2018, p. 117 (borrowing the concept from Alfred Lotka, “The Law of Evolution as a Maximal Principle”, *Human Biology*, 17, 1945, pp. 167–94 – „exosomatic evolution”).

²⁰ And non-living entities / systems, too.

²¹ Liz A.D. Campbell, Patrick J. Tkaczynski, Julia Lehman, Mohamed Mouna & Bonaventura Majolo, “Social thermoregulation as a potential mechanism linking sociality and fitness: Barbary macaques with more social partners form larger huddles”, *Scientific Reports*, 8, 2018, DOI: 10.1038/s41598-018-24373-4: Individuals with more or stronger social bonds experience enhanced survival and reproduction in various species.

that underlies the human discontinuity; while this “originary technicity”²² – seen from the beginning in tandem with the peculiarity/freedom/spontaneity of intentionality²³ – does not allow the control over both the own “machine” of the individual living being and its environment as source of matter, energy and information necessary for life, without the *conscious* intention. *The control is specific only to humans*. It transcends the reaction-adaptation moment and lies on the basis of *conscious intentions according to ideal ends* (values, models and principles). Here the consciousness is so important that it (its ideas as signals) penetrates or influences, at least for a while, even the functioning of cells and their components²⁴.

Therefore, in a general definition, *the human control of the world means the transformation of the world into benign conditions of existence for humans*. But since the communities evolved within the logic of *scarcity*, under an organisation based on *domination-submission*, and within the limits of *partial/circumscribed spaces*, the *knowledge for the control of the world was marked/framed by the pattern given by these facts*. The humans endeavoured to know in order to solve their partial/particular goals and thus, they paid no or lesser attention to both the concrete environments they lived within and the humans subjected in the domination-submission relations, inside and outside their communities. The control of the world was *partial* and had many malignant consequences even on the near environment and definitely on the humans being outside of the beneficiaries of the whole process of knowledge and social construction and civilisation.

The *discontinuity* between human and non-human living beings is, however, given not only by the concrete artificial objects and institutions of civilisation but also by the *knowledge* that is at their origin and has, as every system, a relative autonomy towards other / the real systems / here, the artificial objects of civilisation. Accordingly, we should not neglect that the whole process took part in a structural *contradictory* manner: of *activities*, of *level of knowledge and activities*, of *different type partial results* and *human and environmental consequences*. The control of this contradictory manner cannot be realised through the promotion of an abstract knowledge and the idea of coexistence of contraries. Yin and Yang are only contraries compensating each other and giving the *truth that is the whole* (as Hegel said), and their management is different from the management of the contradictories. Do these contradictories form the whole, thus its truth in the same manner the contraries form it? But can we consider even the contraries in a peaceful manner simply promoting the solution of stability, benevolence and respect in order to control the contraries? Do we not have to consider the concrete *content* of the concepts (“stability, order, respect, natural law etc.”) in their use also by the controlled categories?

If we consider *nature* and *society* as contraries in their interdependencies²⁵ – and not contradictories which coexist only as mutual sources of zero sum relations, as capitalism consider

²² See the beautiful Arthur Bradley, *Originary Technicity: The Theory of Technology from Marx to Derrida*, Plagrave MacMillan, 2011.

²³ Ana Bazac, “The machine motif in Descartes”, *Noesis*, XXXV, 2010, pp. 71-87.

²⁴ Ana Bazac, *The intentionality of the consciousness: from phenomenology to neurosciences and back. The attitude of Evangelhos Moutsopoulos towards the phenomenology of the consciousness* (pp. 103-158) in (translation into Romanian by Ana Bazac) E. Moutsopoulos, *Conștiința intenționată*, Traducere din limba franceză, notă asupra traducerii, note și postfață despre *The intentionality of the consciousness: from phenomenology to neurosciences and back. The attitude of Evangelhos Moutsopoulos towards the phenomenology of the consciousness / Intenționalitatea conștiinței: de la fenomenologie la neuroștiințe și înapoi. Atitudinea lui Evangelhos Moutsopoulos față de fenomenologia conștiinței*, București, Omonia, 2017, p. 128; Ana Bazac, “What is natural and what is un-natural in cancer?”, *Biocosmology – neo-Aristotelism*, Volume 8, Numbers 3&4, Summer/Autumn 2018, pp. 391-420, (p. 402).

²⁵ Paul Robbins, John Hintz and Sarah A. Moore, *Environment and Society. A Critical Introduction*, Second Edition, Willey Blackwell, 2014.

them²⁶, beyond any environmentalist rhetoric – then we can consider the model of (in principle, mutually) benefiting each other; actually, society is that which has constituted and developed on the basis of nature. But it's not enough to say this / to create harmonious models of their relations. The big question is why this image of society-nature mutually compensating each other and showing their interdependence is far from reality and, *at the same time*, from the present knowledge about them?

The answer showing the modern relations – and not “the humans” *in abstracto* – as specific power relations is, on one hand, well-known and on the other hand, not enough. Since people do everything through the medium of their ideas – their knowledge – one should be sensitive towards the setting/adjustment of cognisance that allows *both* high level of knowledge in science, along with incredibly low/superficial level of knowledge of at least a part of population and a general societal organisation that incredibly diverts from the high level of knowledge in science/knowledge. A methodological example, highlighted in present, of the general societal organisation diverting from the high level of the present scientific knowledge is the official axiom that the extreme phenomena in nature would be only natural, inevitable, unpredictable (and isolated) events which can be controlled only by society's “war”.

The history of knowledge intertwines with the history of complex power relations. Continuing the example of hydraulic engineering (a system of knowledge) *because the hydropower was considered by some ones as a “green” one*, and because most of dams worldwide were built after the WWII/in the last decades, we may point out that its goals/rather its results were not neutral towards interests which could alter *one* of the *principles* of knowledge and of technical knowledge: to not harm nature/to harm nature at the minimal level possible.

Were the dams always necessary – instead of levees – as water flow control since they changed nature and fish populations²⁷? The *other* principle of hydraulic engineering is, obviously,

²⁶ Including by subordinating the search for the energy and technological means necessary for alleviating and changing the course of the ecological disaster to the “development” for profit (for instance by promoting the “sustainable development” as a means to boost the profits by the transition from fossil fuels to renewable energy, but by keeping, and stimulating the same “growth” based on waste; see the critique in Jean-Marc Jancovici, *Is “sustainable development” of any use to save the world?*, <https://jancovici.com/en/energy-transition/societal-choices/is-sustainable-development-of-any-use-to-save-the-world/>).

But see the difference between the capitalist firm's externalisation (“socialisation”) of costs, including the waste produced by its energy and the waste generated by the products' physical obsolescence, and on the other hand, the knowledge about waste: *Solar Panels Are Starting to Die, Leaving Behind Toxic Trash*, 08.22.2020, <https://www.wired.com/story/solar-panels-are-starting-to-die-leaving-behind-toxic-trash/>; Garvin A. Heath, Timothy J. Silverman, Michael Kempe, Michael Deceglie, Dwarakanath Ravikumar, Timothy Remo, Hao Cui, Parikhit Sinha, Cara Libby, Stephanie Shaw, Keiichi Komoto, Karsten Wambach, Evelyn Butler, Teresa Barnes and Andreas Wade, “Research and development priorities for silicon photovoltaic module recycling to support a circular economy”, *Nature Energy*, Published Online 13 July 2020, <https://doi.org/10.1038/s41560-020-0645-2>; https://ec.europa.eu/environment/waste/weee/index_en.htm;

Andrew Hopkins, *Organising for Safety. How structure creates culture*, Sydney, Wolters Kluwer, 2019; *Exporting Toxic Chemical Waste to Poor Countries Must End, Says UN*, July 16, 2020, <https://www.globalresearch.ca/exporting-toxic-chemical-waste-poor-countries-must-end-says-un/5718654>; *À Bure, l'agence des déchets nucléaires se paie des gendarmes*, 5 juin 2020, [https://www.mediapart.fr/journal/france/050620/bure-l-agence-des-dechets-nucleaires-se-paie-des-gendarmes?utm_source=20200605&utm_medium=email&utm_campaign=HEBDO&utm_content=&utm_term=&xtr=EREC-83-\[HEBDO\]-20200605&M_BT=1882126269](https://www.mediapart.fr/journal/france/050620/bure-l-agence-des-dechets-nucleaires-se-paie-des-gendarmes?utm_source=20200605&utm_medium=email&utm_campaign=HEBDO&utm_content=&utm_term=&xtr=EREC-83-[HEBDO]-20200605&M_BT=1882126269).

²⁷ Tom Fawthrop, *Madness on the Mekong: How Dams are Killing the Largest Inland Fisheries in the World*, 3 August 2016,

to help the humans, but can this principle be thought *in abstracto*, without considering the *complexity* of human interests involving that fragment of nature related to the transformative hydraulic engineering? The fact that, in modernity, a dam is part of a hydroelectric power plant and thus serves the owners of the plant, of the electrical power and its transmission – certainly serving the population as such – is more important than a levee that does not block up and alters nature's ways, *at the same time* assuring the direct existence of nearby people and the indirect well-being of their customers²⁸? Or that it would be no difference between a dam constructed in public regime, serving communities, and a dam built in order to serve the private interests of mining and agribusinesses (as well as of water export²⁹), although the use of water and the imbalance of water regimes clash dramatically with large communities' need of water³⁰? If the wind power becomes so cheap³¹, why are fission nuclear power plants still constructed? Is it not because the global need of energy requires not only *combined* sources of energy but also a great amount of nuclear energy as the less polluting one³²? But why even renewable energy equipment (wind turbines, solar panels) is not designed and implemented *together* with the anticipated waste it produces? And why the renewable energy and the IT are not considered according to their *general social* costs (exploitation of rare minerals, waste of water, biodiversity destruction)³³? And why the huge *e-waste* is not considered coherently and economically together with the development of electronic devices?

And why is the food wasted when it is so vital, and not only in “far away countries”³⁴?

But do these questions not reflect the level of *knowledge* /science people arrive at? Or, do the development and the management of alternative energies depend not only on knowledge but

http://www.theecologist.org/News/news_analysis/2987981/madness_on_the_mekong_how_dams_are_killing_the_large_st_inland_fisheries_in_the_world.html.

²⁸ See the analysis of dams' consequences in Don Fitz, *Dams, Rivers and Lakes: “Dammed” Good Questions About “The Green New Deal”*. *Ten Problems*, November 04, 2019, <https://www.globalresearch.ca/dammed-good-questions-about-green-new-deal/5693857>, and references.

²⁹ Joyce Nelson, *Canada's SNC-Lavalin Affair: The Site C Dam Project and Bulk Water Export*, November 03, 2019, <https://www.globalresearch.ca/snc-lavalin-site-c-bulk-water-export/5671247>.

³⁰ Martin Scott, *Government has no solution to Australia's water crisis*, 16 October 2019, <https://www.wsws.org/en/articles/2019/10/16/wate-o16.html>.

But see also the transfrontalier damages to nature made by dams (for example the Mongolian Solunge river is diverted from its flow toward Baikal lake, one of the greatest water reservoirs in the world) and society (the *water wars* because of the destruction of water reserves of other countries, *Turkey Cutting Euphrates River Flow to Syria: Crime against Humanity, Violation of UN Water Convention*, February 26, 2017, http://www.globalresearch.ca/turkey-cutting-euphrates-river-flow-to-syria-crime-against-humanity-violation-of-un-water-convention/5576905?utm_campaign=magnet&utm_source=article_page&utm_medium=related_articles).

³¹ Malte Jansen et al., “Offshore wind competitiveness in mature markets without subsidy”, *Nature Energy*, Published 27 July 2020.

³² James Lovelock, “Nuclear power is the only green solution”, 24 May 2004, *Independent OnLine Edition*, <https://web.archive.org/web/20060422055649/http://comment.independent.co.uk/commentators/article61727.ece>; “We have no time to experiment with visionary energy sources; civilisation is in imminent danger”, says Lovelock, but this does not mean that the combined (mostly renewable) sources are not considered; on the contrary – minus the biofuels which use the land for the expansion of carbon dioxide – but the nuclear ones, the more so they are improved, are the most ecofriendly.

³³ *Clean energy progress after the Covid-19 crisis will need reliable supplies of critical minerals*, 6 May 2020, <https://www.iea.org/articles/clean-energy-progress-after-the-covid-19-crisis-will-need-reliable-supplies-of-critical-minerals>; Robert Fares, *Landmark 100 Percent Renewable Energy Study Flawed, Say 21 Leading Experts*, June 23, 2017, <https://blogs.scientificamerican.com/plugged-in/landmark-100-percent-renewable-energy-study-flawed-say-21-leading-experts/>. But see also the clear ‘*Green*’ *billionaires behind professional activist network that led suppression of ‘Planet of the Humans’ documentary*, Sept 7, 2020, <https://thegrayzone.com/2020/09/07/green-billionaires-planet-of-the-humans/>.

³⁴ Claire Kelloway, “Why Are Farmers Destroying Food While Grocery Stores Are Empty?,” *Washington Monthly*, April 28, 2020.

also on the model of different private interests³⁵? Precisely because today energy is treated – in all phases of generation and exploitation³⁶ – in a capitalist regime, that is, for the profit of both the energy sector and the industries that use electricity, the question of goals beyond this regime, for example of ecological goals and humanistic goals, is scarcely put³⁷. Or they are put – and deploring the high risk investments due just to these goals³⁸, namely the higher cost today of Energy Return on Investment (but the costs were habitually externalised by the firms) – not so much because of the new level of knowledge but rather because of environmental life and death pressures³⁹, as well as social pressures. (It's absurd: not even the pressures can stop the development of fossil fuel extraction and irremediable destruction of nature⁴⁰. On the contrary: and together with the direct and indirect subventions given to the wasteful and harmful energy companies, and the reduction of social programmes, including climate policies⁴¹).

Consequently, the questions and treatment of resources and nature depend not only on knowledge but also on *values*. What kind of knowledge and values? *The most recent/the highest ones in the present society*.

The same is concerning the human *efforts* made for the discovery of higher means of controlling the world, and the human efforts substituted by technological devices: while the former must be channelled⁴² on a way devoid of private interests and marked by the unity of freedom of inquiry and the cautious technological implementation, the latter send to the *dialectic* of fragmented and integrative evaluation. Thus, *what kinds of efforts must be substituted?* It depends; methodologically, the above dialectical evaluation is important. And since we know that the evaluation operates with criteria – here, the values – it depends *what kinds of values are considered as criteria*.

For example, the spring of technology does not mean to make everything – according to the idea that everything generated changes – but to make / to implement those artefacts which are

³⁵ Observateur continental, « Les éoliennes en Allemagne: quand le rêve écologique devient un cauchemar », 2020, <http://www.observateurcontinental.fr/?module=articles&action=view&id=1393>.

³⁶ *Gas Companies Are Abandoning Their Wells, Leaving Them to Leak Methane Forever*, September 17, 2020, <https://www.bloomberg.com/news/features/2020-09-17/abandoned-gas-wells-are-left-to-spew-methane-for-eternity?srnd=premium>.

³⁷ *Don't be Fooled: New Mexico Proposal Would Open Door for Toxic Frack Waste Dumping*, 8 July 2020, <https://wildearthguardians.org/brave-new-wild/show-on-home/dont-be-fooled-new-mexico-proposal-would-open-door-for-toxic-frack-waste-dumping/>; *Growth in Renewables has Stalled. Investment is Falling. But Why?*, 30/05/2019, <http://www.defenddemocracy.press/growth-in-renewables-has-stalled-investment-is-falling-but-why/>.

³⁸ *A Third Of Fossil Fuel Assets May Soon Be Stranded*, Feb 12, 2020, <https://oilprice.com/Energy/Crude-Oil/A-Third-Of-Fossil-Fuel-Assets-May-Soon-Be-Stranded.html>.

³⁹ We have entered the 'end game' for oil - with "permanent demand destruction, July 30, 2020, <http://priceofoil.org/2020/07/30/we-have-entered-the-end-game-for-oil-with-permanent-demand-destruction/>; Samantha Mason, Time to end the market farce of energy transition: we need a pro-public democratically controlled energy system, 11 Feb 20, <https://www.transform-network.net/en/blog/article/time-to-end-the-market-farce-of-energy-transition-we-need-a-pro-public-democratically-controlled-en/>.

⁴⁰ Fred Pearce, *A Major Oil Pipeline Project Strikes Deep at the Heart of Africa*, May 21, 2020, <https://e360.yale.edu/features/a-major-oil-pipeline-project-strikes-deep-at-the-heart-of-africa>.

⁴¹ *Climate policy endures rough EU budget summit*, Jul 22, 2020, <https://www.euractiv.com/section/climate-environment/news/climate-policy-endures-rough-eu-budget-summit/>. But see especially the *United in Science 2020: A multi-organization high-level compilation of the latest climate science information*, pdf, public.wmo.int/en/resources/united_in_science (World Meteorological Organization, Global Carbon Project, UNESCO Intergovernmental Oceanographic Commission, Intergovernmental Panel on Climate Change, UN Environment Programme, Met Office).

⁴² But nowadays, these efforts are framed by the private interests. These interests clash even with the principle of free market/free competition. See *US Sanctions Russian Defence Ministry Research Institute That Worked on COVID-19 Vaccine*, 27/08/2020, <http://www.defenddemocracy.press/us-sanctions-russian-defence-ministry-research-institute-that-worked-on-covid-19-vaccine/>.

suitable with the more recent level of understanding the human values; today, suitable with the values of the human *species* and thus of *every human being*⁴³. The washing machine might not have changed the world more than the internet⁴⁴, but it is certainly much more valuable than weapons. Or, if the estimations for energy (consumption) reflect the present demands, *it is the demands which must be reviewed*⁴⁵. Do not forget that all the energy saving programmes exclude this problem – that is put at the level of the firm, irrespective of its products – and, concretely, the demands of the military industry and activities. Science means wonder and analysis – thus including the examination of clear negative technical *implementations*⁴⁶ and even of apparently positive ones⁴⁷: in Popper’s terms, their *falsification*. This process cannot be cancelled by sophistries: as the one that *reduces the disruptive phenomena in nature to the climate change* (ignoring the destruction of biodiversity and the destruction of resources and of physical balances) and the one that *reduces the*

⁴³ Ray Lankester, *Science from an Easy Chair*, London, Methuen & Co., 1913, pp. 284-285: “This great diminution in the death-rate has been coincident with the expenditure of public funds on the improvement of the water supply and the sewage arrangements of those cities, as well as with the enforcement of regulations to prevent over crowding, and with the demolition of the most insanitary houses”.

⁴⁴ But Ha-Joon Chang, *23 Things They Don't Tell You About Capitalism*, Bloomsbury Press, New York, 2010, pp. 31-40, has considered that the washing machine has changed the world more than the internet..

⁴⁵ Science is always discovering new aspects that researchers have not thought of at all before. One is the analysis of electricity and electromagnetic radiation from the environment and health standpoint, and the emphasis of electrical and radiation pollution. If this analysis is criticised from the point of view of the polluters which silence and cover it because it opposes to the private profit interests from the electrical and radiation industries and mostly from the military-industrial complex, is it not *necessary from a scientific view to systematically and openly deploy the research and, at the same time, to abolish at least the immediately visible sources of this pollution, as the the military development of weapons* (see only *High-frequency Active Auroral Research Program*, https://en.wikipedia.org/wiki/High-frequency_Active_Auroral_Research_Program) and as advertisements placed in the whole process of electronic communication?

To the competent analysis of Arthur Firstenberg, *The Invisible Rainbow: A History of Electricity and Life*, Santa Fe, NM: AGB Press, 2017 (*but see also* Arthur Firstenberg, *The Largest Biological Experiment Ever*, 1 Jan 2006, https://www.cellphonetaskforce.org/wp-content/uploads/2011/06/largest_exp.pdf; *Planetary Emergency*, May 14, 2018, <https://www.cellphonetaskforce.org/planetary-emergency/>), as well as to official positions of scientists and to recent research (*Scientific Research on 5G, 4G Small Cells, Wireless Radiation and Health*, <https://ehtrust.org/scientific-research-on-5g-and-health> with a large body of recent scientific references; *5G Corporate Grail. Microwave Radiation. Smart cities/dumb people?*, November 09, 2018, <https://www.globalresearch.ca/5g-corporate-grail-microwave-radiation/5659341>; Erin Elizabeth, “Unexplained Mass Bird Deaths During Dutch 5G Experiment”, November 6, 2018, *Principia Scientific International*, <https://principia-scientific.org/unexplained-mass-bird-deaths-during-dutch-5g-experiment/>; *5G Is The “Stupidest Idea In The History of The World”- Washington State Biochemistry/Medical Science Prof*, febr 19, 019, <https://www.collective-evolution.com/2019/02/19/5g-is-the-stupidest-idea-in-the-history-of-the-world-washington-state-biochemistrymedical-science-prof/>; *Brussels Becomes First Major City to Halt 5G Due to Health Effects*, April 04, 2019, <https://www.globalresearch.ca/brussels-first-major-city-halt-5g-due-health-effects/5673606>; *5G Health Risks; The War Between Technology and Human Beings, May 14, 2019*, <https://www.gaia.com/article/5g-health-risks-the-war-between-technology-and-human-beings>; Lisa Henkes, *Radio Frequency Radiation (EMF) Threatens Plant and Animal Species with Extinction*, June 11, 2019, <https://www.globalresearch.ca/unspoken-truth-emfs-threaten-1-million-species-extinction/5680338>; *EU 5G Appeal – Scientists warn of potential serious health effects of 5G*, 30/03/2020, <http://www.defenddemocracy.press/eu-5g-appeal-scientists-warn-of-potential-serious-health-effects-of-5g/>; the answer is not to ignore it – as it surreptitiously is developed, i.e. applied –, but to better research it.

⁴⁶ Jake Hays, Seth B.B. Shonkoff, “Toward an Understanding of the Environmental and Public Health Impacts of Unconventional Natural Gas Development: A Categorical Assessment of the Peer-Reviewed Scientific Literature, 2009-2015”, *PLOS ONE* 11(4): e0154164. doi:10.1371/journal.

⁴⁷ Kate Hudson, *Funding Hydropower Projects will Not Fight Climate Change*, August 10, 2020, <https://waterkeeper.org/news/funding-hydropower-projects-will-not-fight-climate-change/>.

*disruptive phenomena to the difficulty to achieve the capitalist economic growth*⁴⁸, as if this type of economic activity would be unquestionable.

The values are the *reason to be* of human intentions and actions. The reason to be is obviously related to the ideas forged to legitimate, or not, some actions and deeds, but ultimately it resonates with the concrete conditions of the human existence. But because these conditions were and are framed by power relations, the ideas/the manners of thinking (including of the intellectuals) are imbued by values moving in the space created by domination and submission.

Such an example is the relationship between the belief in science and the religious beliefs. They are not necessarily excluding each other, since they concern quite different aspects of life. Science and the use of technological devices may comfort people, give them trust, even trust in the power of man, but the social relations seem to contradict this power and this trust: so, *in order to have support and meanings of the human life, science and technology are not enough*. They are meaningful only when people have support and meanings in their concrete existence, namely, not only as isolated individuals and families but as even more than large communities: as members of the whole human *species and* developing support and meaningful life for every member of the species. A well-known sociologist, Ronald Inglehart, making successive surveys about the religiosity of people in 49 countries, found that: “as the level of security rises, people tend to become less religious” and that the evidence does not support the claim that the retreat of faith would lead to a collapse of social cohesion and public morality⁴⁹. People were taught to *separate* things and thus they considered the moral ideal given by religion as enough and *sine qua non*. But, once more, they have experienced that the religious supply does not match with reality. If people need hope in and for their life and they have experienced that religion does not provide it, they need other values. These are the values of *belief/trust in man’s power to control the world in a beneficial way for all*⁵⁰. Since the pattern of social relations has perverted/deviated the conscience of the

⁴⁸ See the criticism of William Nordhaus in: Antoine Costa, « Une planète en surchauffe plongée dans les eaux glacées du calcul égoïste », 29/12/2018, <http://www.defenddemocracy.press/une-planete-en-surchauffe-plongee-dans-les-eaux-glacees-du-calcul-egoiste/>, showing the ideological pattern framing the capitalist ecological strategies – as modelling the climate-economy relation according to “the most profitable temperature” from capitalist standpoint; as modelling the relation according to the Western Gross Domestic Product (GDP) but not taking into account that the value/GDP is created in the developed countries and mostly in the tertiary sector where climate matters the least and thus that the category of “poor farmers dependent on their environment” making up most of humanity counts little in GDP calculations; as linear and homogenous model of the global warming; as avoidance of the social aspects and as technophile attitude betting on inexistent technologies which can suck CO2 out of the atmosphere, on tree planting (that, however, does not compensate the present deforestation) etc., thus assuming the ordinary capitalist idea that if the individual enriches, the country enriches and thus the world, and that one should think to one’s own forests not to the forests of the planet (as if today the farmers would be educated only in this pattern and would not have access to the mass mediate; similar criticism in Eugene Linden, *The economics Nobel went to a guy who enabled climate change denial and delay*, Oct 25, 2018, <https://www.latimes.com/opinion/op-ed/la-oe-linden-nobel-economics-mistake-20181025-story.html>; and in Steve Keen, *Nobel prize-winning economics of climate change is misleading and dangerous – here’s why*, September 9, 2020, <https://theconversation.com/nobel-prize-winning-economics-of-climate-change-is-misleading-and-dangerous-heres-why-145567>.

⁴⁹ Ronald F. Inglehart, “Giving Up on God: The Global Decline of Religion”, September/October 2020, https://www.foreignaffairs.com/articles/world/2020-08-11/religion-giving-god?utm_medium=newsletters&utm_source=twofa&utm_campaign=Giving%20Up%20on%20God&utm_content=20200821&utm_term=FA%20This%20Week%20-%2020112017, preceding his forthcoming (2021) book *Religion’s Sudden Decline: What’s Causing It and What Comes Next?*.

⁵⁰ The beneficial control of the world was summarised – in its negative form, as Injustice and Societal Decay – as following (Ralph Nader, *Needed: Indicators for Measuring Injustice and Societal Decay*, 15 August 2020,

dialectical unity individual-community-species, since the private capitalist relations have compromised both this dialectic and its perspectives of life on Earth, the way out is not the religious ideology, because it has proved its inadvertence towards the control of the world by all and for the benefit of all. The human control of the world can no longer be conceived of as coexistence of science and technology *and* religion *and* lack of humanist values.

The tendency of the decline of religion between 2007 and 2019, emphasised by the above-mentioned survey, has suggested that an impulse to reverse it could be just a pandemic, a phenomenon that challenges the man's power to control the world; here, the pandemic has a certain similarity with the collapse of the socialist countries in 1989-1991: the event was followed by a rise of religion in those countries because people were led to believe that they no longer have power to control the world. In the present world, and not only on the occasion of the pandemic but rather in front of the overwhelming consequences of devastated nature and society, if people have no humanist values explaining them this situation and motivating their activism to realise their hope – if, for instance, they see that the organisation of the world make them powerless in front of the world but do not understand how to cope with – they pray. They do not change anything by their praying, but they pray: because they were forced, through constraints, education and manipulation⁵¹, to think they would only have this manner to survive⁵². Fortunately, as we know, there is never one single phenomenon manifesting, no matter how important it may be.

Therefore, people did not start from principles, but from *existential* problems, and thus they outlined the principles both as *ideals* opposing reality and as *images* of the known realities. How nature was considered – as opposite that can be overcome, or as unimportant one, or as a contradictory entity to humans – has depended and depends on the frame of social relations, and not only on knowledge⁵³. Actually, just that frame has imposed and imposes the patterns of *public* knowledge: that where the *scientific spirit* rules, *questioning the premises* and *inquiring* everything in a rationalist way *to the end* – and thus allowing solutions of human control over the world – or that where the *authority principle* related to the *private* interests dominates the scientific spirit, imposing solutions for private interests. When this latter pattern is predominant, the control over masses may be efficient, but the *human* control of the world is not. (This is the reason of the present probable trend of extinction of life on Earth and thus of the human species⁵⁴).

<https://www.commondreams.org/views/2020/08/15/needed-indicators-measuring-injustice-and-societal-decay>): “A society is decaying when liars receive mass media attention while truth-tellers are largely ignored; A society is decaying when rampant corruption is tolerated, and its perpetrators are rewarded with money, votes, and praise; A society is decaying when a growing number of people believe in fantasies instead of realities; An expanding economy focusing increasingly on ‘wants and whims’ while ignoring the meeting of basic ‘needs and necessities’ shatters societal cohesiveness and deepens miseries of many people. Adequate housing, healthcare, food, public services, education, mass transit, health & safety standards, and environmental protections are the prerequisites for a humane democracy; Rampant commercialism knowing no boundaries or restraints even to protect young children is running *roughshod* over civic values; A society that requires its people to incur crushing debt to survive, while relying on casinos and other forms of gambling to produce jobs, is going backward into the future”.

⁵¹ See the huge post-89/91 programme of churches and cathedrals construction and infringement of the principle of separation between the state and the Church in former Eastern countries, like Romania. (Ana Bazac, « Au-delà de Rawls, même s'il soit point de départ: religion et raison publique en démocratie », *Analele Universității din Craiova – Seria Filosofie*, 41 (2), 2018, pp. 150-177).

⁵² Obviously, this way out is intertwining with mundane escapes, including corruption and crime (as Inglehart's research has revealed: there is no less corruption and crime in the more religious countries).

⁵³ Ray Lankester, quoted in Ana Bazac, “The Microenvironment and the Human Space”, *Noema*, 2019, pp. 95-153.

⁵⁴ William J. Ripple, Christopher Wolf, Thomas M Newsome, Phoebe Barnard, William R Moomaw (November 5, 2019), “World Scientists’ Warning of a Climate Emergency”, *BioScience*, Volume 70, Issue 1, January 2020, pp. 8–12;

Finally, the knowledge for the human control of the world means not only the scientific *pattern*, but also the tackling of “details”, of “exceptional phenomena” “outside the models and not bringing anything to the understanding” (such as the few examples given in the first part of the Prolegomena). On the contrary, just *by considering these details and phenomena the models can be falsified, and therefore they become more robust* (or they fail). If nature and society cannot be separated in their understanding, then *neither their control must be considered in a fragmented manner*, and the regulations of both must be coherent⁵⁵.

However, these logical requirements were not observed: because of the same capitalist power relations⁵⁶. As it is known, some ones have called Anthropocene all the periods from the appearance of man on the Earth, because the human beings have changed and *altered* the environment from the beginning⁵⁷; however, other ones have called Anthropocene only the last 250 years, from the industrial revolution onwards when the alteration has *accelerated*⁵⁸, while other ones have insisted on the *disruptive* changes in the last 30/40 years, or even the last 20 ones⁵⁹. We can observe that the last 30-40 years are only a *continuation* of the anterior processes of the industrial capitalism; while at the same time they are an *acceleration of acceleration* generating and showing the *systemic* disruptive direction resulted from the inherent combination of all the processes through which the *privately fragmented* control of human-nature and human-human relationships have been deployed. Accordingly, beyond “cooperatives of knowledge” (Bernard Stiegler’s initiative) about the ways out, the pattern of these ways can be but *systemic*, i.e. international, world/worldwide as universal⁶⁰. One cannot develop a country, and at high standards, and at the same time support, even if indirectly, the wars in the world, the destructions and irreversible tragedies generated by nuclear and non-nuclear tests and the destructions and disintegration of nature’s balance and components.

But the present structural economic-political system *subordinates* knowledge – the scientific discoveries and technical innovations – to the private interests of domination-submission.

Guy McPherson, *Extinction Foretold, Extinction Ignored*, last updated 11 July 2020, <https://translate.google.com/#view=home&op=translate&sl=ro&tl=en&text=mondial>.

⁵⁵ An interesting example that requires the unitary coherent regulations is the contradiction between some interests of energy efficiency and other interests for energy consumption, including those of extensive exploitation of energy sources (drilling the submarine plate to exploit new reserves); or that of the contradiction between efficiency as resource and waste reduction in the whole society and, on the other hand, the private interests for resource consumption. When the policies impose as priority the financing of the purchase of individual electric cars, but not/even not at all the water treatment, the waste management, recycling and the sustainable packaging; or the carbon capture (deffering these aspects or leaving them at the mercy of private initiative), it’s hard to speak about up-to-date environmental policies.

⁵⁶ Ashley Dawson, *Extinction: A Radical History*, New York, O/R Books, 2016.

⁵⁷ See Peter James Taylor, Geoff O’Brien, Phil O’Keefe, “Anthropogenic Climate Change is Urban Not Modern: Towards an Alternate Critical Urban Geography”, *ACME: An International Journal for Critical Geographies*, Vol. 16, No. 4, 2017, pp. 781-803, where not the well-known idea of the presumed origin of climate change with the discovery of fire and agriculture and husbandry was repeated, but the theory of urban generation of climate change as main factor was sketched.

⁵⁸ In this sense, it was called Capitalocene by Jason Moore, “Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism”, *Sociology Faculty Scholarship*, 2016, pdf.

⁵⁹ Daniel Ross, Introduction to Bernard Stiegler, *The Neganthropocene*, Edited, translated, and with an introduction by Daniel Ross, London, Open Humanities Press, 2018, p. 11: “(1) the rise of social networks; (2) the growth of the ubiquitous interactive screen; (3) the global financial crisis as symptomatic of the tendency of investment to become increasingly short-term and speculative; (4) the proliferation of geopolitical crises, terrorism and related forms of individual and collective acting out; (5) automation as a threat to a consumerist macro-economic system founded on employment-based purchasing power; (6) the Anthropocene as an ‘existential threat’ to human existence and the biosphere; and (7) the unfurling of the consequences of industrially-generated populism, including the entrance into a so-called ‘post-truth’ age”.

⁶⁰ Séminaire Pharmakon 2019/2020 – Bernard Stiegler, <https://recherchecontributive.org/seminaire-pharmakon-2019-2020-bernard-stiegler/>.

Information is, in this system, an exchange-value. ICT, AI, spatial devices as satellites, biotechnology and bio-psycho-technology are considered weapons/means to modernise weaponry in order to assure the dominance in the armaments race and the maintaining of world powers status⁶¹; instead of transforming science and technology into means of humanity's survival and development. As instruments, science and technology can be used in different ways: the humans are those who choose⁶², but the results of the *dominant* decisions converged to the *present* state of the world. The models of economic *resilience* were shaped according to the *dominant* decisions⁶³; and the present ones still prove the same methods and ends⁶⁴. The striking example is that of the contradictions of the ecological strategies and the impossibility of environmental justice⁶⁵, showing the interdependence between the ecological and social solutions worldwide and thus the necessity of an alternative model.

Therefore, how can one logically conceive that all of the “exceptional”, i.e. accidental” examples mentioned throughout this paper would be solved within the (continuing) pattern of private structural relations?

Any control process is at the same time a *structuring* process. The systems/reality – actually, their structure and order – are shaped according to the purposes and means of the control. They are structured marking not only the *temporality* (namely, the temporal feelings of people confronted with the “temporal” differences of order, structures of relations, representations of institutions), as violence, for instance, does⁶⁶, but also the *coherence* of logic / reason / causal-motivational thinking and values of the human-society relationships. The systems/the social order do not change if the political control ignites artificial problems and oppositions⁶⁷, and the social incapacity to generate discontinuity or rupture in the social fabric is converted into a slowing down/a paralysis of both the structures and the thinking of criteria and values. Or the old political control may be interrupted, but again both *the thinking and the capacity to innovate structures* in the process of interruption *matter*.

The modern control as capability to privately profit from the scientific and technological intelligence had and has a power of structuring, too. In fact, the more this control structures the

⁶¹ Christian Brose, *The Kill Chain: Defending America in the Future of High-Tech Warfare*, New York, Hachette Books, 2020.

⁶² “It can even be thought that radium could become very dangerous in criminal hands, and here the question can be raised whether mankind benefits from knowing the secrets of Nature, whether it is ready to profit from it or whether this knowledge will not be harmful for it. The example of the discoveries of Nobel is characteristic, as powerful explosives have enabled man to do wonderful work. They are also a terrible means of destruction in the hands of great criminals who are leading the peoples towards war. I am one of those who believe with Nobel that mankind will derive more good than harm from the new discoveries”, Pierre Curie, *Radioactive substances, especially radium*, Nobel Lecture, June 6, 1905, p. 6.

⁶³ Lino Briguglio, Gordon Cordina, Nadia Farrugia, and Stephanie Vella, *Economic Vulnerability and Resilience: Concepts and Measurements*, May 2008, Research Paper No. 2008/55, United Nations University – World Institute for Development Economics Research.

⁶⁴ *COVID-19 ups pressure on world resilience as global insurance protection gap reaches new high*, Swiss Re Institute indices show, 26 Aug 2020, Zurich, <https://www.swissre.com/media/news-releases/nr-20200826-resilience-index-2020.html>.

⁶⁵ See the clear analysis and references in Bernard Duterme, *Les cinq dilemmes de la crise écologique*, <https://www.cetri.be/Les-cinq-dilemmes-de-la-crise?lang=fr>.

⁶⁶ Ion Copoeru, “Event and Structure: A Phenomenological Approach of Irreducible Violence”, *Human Studies*, volume 43, 2020, pp. 257–268.

⁶⁷ For example, racial/nationality oppositions (as incompatibility) not explaining why there are social inequalities within the same race/nationality.

order and manifestations of society, the stronger is the separation between the scientific and technological achievements and the ability of people to control science and technology.

The technophile optimism⁶⁸ *imagines* that by designing new gadgets – similarly to the fashion industry that imposes the moral obsolescence and substitution of goods, generating waste at both ends of the demand and consumption chain – technology (subordinating science to this goal) would assure progress, i.e. the human control of the world. However, as it was said, the race ‘to make devices which would give more time to design new gadgets which would give more time to design new gadgets’ shows only the capitalist fragmentation of society and the separation between the thin layer of those designing gadgets in the service of the thin layer of profiteers of the world, and, on the other hand, the bulk of the human beings deploying essential work, including in science and technology.

2. Human vulnerability / fragility

In the social (non-psychological) perspective on it, the human vulnerability is the *result* of the human relationships in the world of humans, of nature, of science and technology. Because of the historical reasons already known, famous thinkers have warned that in modern times – but especially nowadays – the humans seemed to become dependent on technology, on artefacts, even *addicted*⁶⁹, thus powerless. But let’s not forget – and because of the same historical reasons – the humans were and are dependent on institutions and domination-submission relations: and *the more so as they are controlled with scientific means*.

Therefore, the human vulnerability cannot be discussed separately from the existing conditions in the social environment. But the point is the *dialectic* of fragility and power: the humans are both vulnerable and powerful⁷⁰. The conditions are hostile and the humans show their fragility; and the conditions are friendly, the humans trotting out along their power. The more so as the humans control their conditions, they are more powerful.

The capacity to control the world and the state of fragility of humans are *mutual criteria*, inasmuch as they *depend on* the class and community membership of the individual. Anyway, the control of the natural environment depends on the control of the social milieu, and the individual, community and species’ relations with the world are mutually mediated. This is the *dialectic* of fragility and control, and the source of their detectable contradictions.

The dialectic of vulnerability and control is all the more apparent in the present times of pandemic. The physicians – and generally, the medical staff – proved to be special, having even unique importance: just because they have a special relationship with the human fragility (and death⁷¹). The pandemic drew attention on the *criterion to always start from the fragility of every human being* and to organise the human milieu (till its larger, natural environment) according to this starting point. The accomplishment of this criterion means, actually, just the human control of the world. However, as the human knowledge and the official criteria are subordinated to the private profit, so there are not the above health criteria the ones proved to organise, thus to control the world.

⁶⁸ Characterised as “technological somnambulism” by Langdon Winner, *The Whale and the Reactor: A Search for Limits in an Age of High Technology*, Chicago, University of Chicago Press, 1986, p. 10.

⁶⁹ Ladislav Kováč, “Homo artefactus”, *EMBO Reports*, 15(5), May 2014, DOI: 10.1002/embr.201438750.

⁷⁰ Though the paper is only a sketch, it is worthwhile to mention an idea emphasized from a phenomenological standpoint: that both the vulnerability and the control of the world, being ideas, are perceived – as violence is, Cristian Ciocan, “Towards a Multi-modal Phenomenological Approach of Violence”, *Human Studies* (2020) 43, pp.151–158, <https://doi.org/10.1007/s10746-020-09551-6>, (p. 152) – as both *latent* and *actual*.

⁷¹ Ana Bazac, *Notă despre eroism*, 4 mai 2020, <http://www.criticatac.ro/nota-despre-eroism/> [Note about heroism].

Even more: the human activities should have as their main criterion/starting point, the human vulnerability of *every* human being. Thus, the vulnerability is both of the individual and of the species. The latter is fragile in front of the nature that became unbalanced up to the point of no return because of the capitalist behaviour towards it. And how can every individual surpass his/her own fragility when the health care – necessarily in resonance with the above criteria – is constrained by the logic of private healthcare enterprises, including promoted by the logic of “communities”/ states’ private interests? How can an individual surpass his / her fragility when he / she is considered to be a “client” by the private healthcare enterprises – thus treated according to his/her money – and not *patient* in the original meaning of this word? The logic of these questions is supported by The Human Capital Index 2020, where the measurements show that not so much the median income or the Gross Domestic Product are the keys for the children’s and adults’ survival, their level of health and learning, but the access to health care and education⁷².

Therefore, the point resides in the *dialectic* of *fragility* and *power*: the humans are both vulnerable and powerful. But in this short chapter the focus is on the *individual* fragility: in the given society. How to cope with it?

The starting (material and educational) conditions of an individual are very important⁷³. The same is with the material and cultural conditions in the adult life. The risks⁷⁴ and their consequences⁷⁵ are higher as deprivation increases.

Maslow⁷⁶ has long before pointed out how the human needs are structured. But how can we understand them at the individual level? The good/favourable conditions are *stimulants* for the will and resilience of the human being. The stimulants are not simply causes – or stimuli – although they are certainly causes of the level of power to endure, defy and create. The causes have many types of results, but the *stimulants cause only positive followings*. They are neither psychostimulants, drugs to invigorate the nervous system and to cause pleasure. Just capitalism has developed them as a *compensation* for the low or inappropriate material and spiritual conditions of life. They were developed as both performance-enhancing and recreational: just because 1) the normal life does not offer the stimulants and 2) since the performance is lucrative (in sport, for example), it must be

⁷² *The Human Capital Index 2020 Update: Human Capital in the Time of Covid-19*, Washington, International Bank for Reconstruction and Development / The World Bank, 2020, pdf., pp. 29, 34, 39, 40, 44, 55, passim.

⁷³ Pierre Bourdieu, Patrick Champagne, « Les exclus de l'intérieur », *Actes de la recherche en sciences sociales*. Vol. 91-92, mars 1992. *Politiques*. pp. 71-75; doi : <https://doi.org/10.3406/arss.1992.3008>, https://www.persee.fr/doc/arss_0335-5322_1992_num_91_1_300; Closing the Opportunity Gap, *A Project of the Saguaro Seminar*, 2016, pdf; Guglielmo Barone, Sauro Mocetti, *What's your (sur)name? Intergenerational mobility over six centuries*, 17 May 2016, <https://voxeu.org/article/what-s-your-surname-intergenerational-mobility-over-six-centuries> and Michael Roberts, *Wealth or income?*, <https://thenextrecession.wordpress.com/2020/07/15/wealth-or-income/>: “the higher the inequality of personal wealth in an economy, the more likely that the inequality of income will be higher”; *Financial Health of Young America: Measuring Generational Declines between Baby Boomers & Millennials*, 2017, pdf.

⁷⁴ Thomas Rowe, “Risk and the Unfairness of Some Being Better Off at the Expense of Others”, *Journal of Ethics and Social Philosophy*, <https://doi.org/10.26556/jesp.v16i1.621> Vol. 16, No. 1, September 2019, pp. 44-66.

⁷⁵ Anne Case and Angus Deaton, “Rising morbidity and mortality in midlife among white non-Hispanic Americans in the 21st century”, *PNAS*, December 8, 2015, vol. 112, no. 49, pp. 15078-15083; *The Distressed Communities Index 2017*, pdf; Alan J. Auerbach et al., *How the Growing Gap in Life Expectancy May Affect Retirements Benefits and Efforts*, National Bureau of Economic Research, Working Paper 2339, 2017, pdf; Warren D. TenHouten, “From *Ressentiment* to Resentment as a Tertiary Emotion”, *Review of European Studies*, Vol. 10, No. 4; 2018, pp. 49-64; Dusan Petrovic et al., “The contribution of sleep to social inequalities in cardiovascular disorders: a multi-cohort study”, *Cardiovascular Research*, cvz267, <https://doi.org/10.1093/cvr/cvz267>, published: 22 November 2019, pp. 1-11; *Sanatoria, crisi emersione lavoro domestico*, 21 Luglio 2020, <http://www.studiolegaledi.it/2020/07/21/sanatoria-crisi-emersione-lavoro-domestico/>.

⁷⁶ A. H. Maslow, “A Theory of Human Motivation”, *Psychological Review*, 50, 1943, pp. 370-396.

boosted, augmented; and 3) since work does not give pleasure and thus nor the leisure time does, this one must be filled with artificially enhanced pleasure.

There are, also food supplements. But these ones are not stimulants, only adjuvant substances for the immune system. They may compensate and improve⁷⁷, but they *do not substitute* food: so as if the food is unhealthy, the supplements do not transform it in a healthy one.

Beyond the positive reactions, the stimulants generate more or less *well-being*. But for this result, they must be *the set of material and immaterial cultural conditions* of the human being. People need this type of “normal”, “worldly” stimulants. They cause degrees of satisfaction and *determination*, obviously. People need them *permanently*, because otherwise their psychical power weakens. But what is necessary is the *set* of stimulants: for the human being, his mind, to generate clever *active* responses to the challenges of life; creative, anticipative, proactive responses. The difference between *conditions as stimulants* and the psychostimulants is that the first ones strengthen the vital force, generating *enthusiasm for the effort deployed in order to solve the problems*; while the second ones weaken the vital force, transforming the humans into fragile little animals searching their pleasure and hating the human effort. In the same group of fragile animals are also those who extinguish the human responsibilities towards other humans and want only to “vanish”, and even they are used as profit tools⁷⁸.

The human fragility can be confronted but from the level of human responsibilities: towards other individuals – not only towards the loved ones – even towards those far away, thus towards communities and the whole human species.

The ideas, the goals are stimulants, too. As such, they produce pleasure. Are the stimulants only inducers for pleasure? The human goals are not only the pleasure and neither the pleasure triggers. Even in Epicurus the purpose of life is the pleasure framed by reason giving the virtue/excellence as the highest level of human values, and thus to control one’s own desires in order to attain pleasure, described negatively as lack of physical and mental pain, is not only the way to pleasure but the pleasure itself⁷⁹. This control meant, in fact, an *integrative* view on pleasures. Maslow has revealed that when a need is accomplished, other ones (superior) develop. Accordingly, the pleasures and the needs – each kind separately but also together – are imbricated (overlapped/partly covered) as in *mosaic* structures⁸⁰, thus integrated. In the same way, the stimulants are also integrated: according to ideas, thus to goals and reasons.

This explains why the psychostimulant drugs are not enhancing factors of the humanity of humans – of their ideas, goals and reasons (and reasons to be) – but, on the contrary, reductive, simplifying⁸¹. On the contrary, the social *ideals*, solidarities and endeavours, being different from

⁷⁷ Mary L. Fantacone, Malcolm B. Lowry, Sandra L. Uesugi, Alexander J. Michels, Jaewoo Choi, Scott W. Leonard, Sean K. Gombart, Jeffrey S. Gombart, Gerd Bobe, Adrian F. Gombart, “The Effect of a Multivitamin and Mineral Supplement on Immune Function in Healthy Older Adults: A Double-Blind, Randomized, Controlled Trial”, *Nutrients*, 12 (8), 2020, 2447 DOI: 10.3390/nu12082447, pp. 1-15.

⁷⁸ *When adults walk away, it's wrenching but not illegal*, March 18, 2012, <https://www.startribune.com/when-adults-walk-away-it-s-wrenching-but-not-illegal/143269506/>; *Adults may be free to go missing, but that doesn't mean they don't need help*, 30 Sep 2015, <https://www.theguardian.com/commentisfree/2015/sep/30/adults-missing-children-petrapazsitka/>; *The companies that help people vanish*, <https://www.bbc.com/worklife/article/20200903-the-companies-that-help-people-vanish>.

⁷⁹ Beyond Diogenes Laertius, see *Nouvelle théorie des plaisirs*, par Mr. Sulzer de l'Académie Royale des Sciences et des Belles-Lettres de Berlin ; avec des *Réflexions sur l'Origine du Plaisir*, par Mr. Kaestner de la même Académie, M.DCC. LXVII.

⁸⁰ Georges Chapouthier, *The Mosaic Theory of Natural Complexity: A scientific and philosophical approach*. New edition [online]. La Plaine-Saint-Denis: Éditions des maisons des sciences de l'homme associées, 2018 (generated 12 April 2018). Available on the Internet: <<http://books.openedition.org/emsha/200>>.

⁸¹ As Alexandre Kojève, *Introduction à la lecture de Hegel, Leçons sur la Phénoménologie de l'esprit professées de 1933 à 1939 à l'École des Hautes-Études réunies et publiées par Raymond Queneau*, Paris, Gallimard, 1947, note 2, p.

individual *aspirations* and from psychological mechanisms of immediate motivations, can develop the human will of activism and optimism, the human force to live, and to live a human life.

Finally, if stimulants are those producing motivation, pleasure, well-being, just the relations between individuals and their conditions of living, in other words just the social differences give the difference between more or lesser stimulant/incentive conditions between people, and thus between different layers of people having access to more or less incentives. The latter, people having access to fewer stimulants are those who are more likely to have conditions that are rather constraining than stimulant, and even to be so constrained that in order to live they do actually need even those constraining conditions⁸². And *they feel all of these*.

3. The mechanism of accepting the lack of power

The humans know by discerning, separating; but knowledge always involves unification, because otherwise the understanding does not take place. But the efficient cause (Aristotle) /direct origin of the acceptance of lack of power is not the process of knowing, but the modern model of knowledge, related to the rise of capitalism. The modern science meant first separation, fragmentation, isolation of phenomena and systems, because otherwise their knowing would have been impossible. This manner has passed into education as well. But the other origin of acceptance, the capitalist relations, has led to a general fragmentary thinking: people had to follow the causal lines but not/less their integration, in a way corresponding to the first industrial revolutions and to the pattern of science organisation. The more a research was immediately efficient / lucrative, the better for the researchers. But once they got used to it, they ended up looking at the social mechanism of fragmenting as being normal, too. For this reason, the integrative ideas were more difficult to accept by the political organization of science and by the researchers, while many integrative ideas were marked by the contradictory education of thinkers (such as their idea of coexistence of science (including their integrative ideas) with religion⁸³).

Moreover, a beaten path is the circumscribing of researchers in humanities within the domain of analysis of concepts with illustrative examples that underline the truth of the analysis; while in science and technology the focus is on measurements, calculus and fragmented problem solving. Thus, the integrative ideas were considered in the mainstream thinking until recently as rather philosophical. That's because of an odd representation of the relationship between the most important feature of the modern science – the experience / observation of facts/experiments as basis of scientific knowledge – and the integrative view: instead of seeing that *just the experience leads to integrative theories/knowledge*⁸⁴, the modern approach has simplified the relationship as being only a contradiction between experience and integrative view. And the first was deployed in a fragmented manner. But the modern fragmentary, even scientific, thinking was the correspondent of the *modern* type *extensive* economy: not only as the extensive use of resources but also/foremost as

435 has showed: without the logical capability of discursive logos it is no knowledge of the world, and that will not make the humans happy.

⁸² See Simon Mongey and Alex Weinberg, *Characteristics of Workers in Low Work-From-Home and High Personal-Proximity Occupations*. March 2020, Working paper, BF Institute for Economics at UChicago, pdf; Eduardo Porter, *The Service Economy Meltdown*, Sept. 4, 2020, <https://www.nytimes.com/2020/09/04/business/economy/service-economy-workers.html>.

⁸³ See an unconvincing thesis that this coexistence would be possible, if one would distinguish the methodological naturalism (that a possible supernatural realm must not be mixed in and with the scientific research) from the philosophical one (that there is not any supernatural realm), and if one would differentiate between the judgements of facts and the value judgements), in Massimo Pigliucci, "Science and fundamentalism", *EMBO Reports*, VOL 6 | NO 12 | 2005, pp. 1106-1109.

⁸⁴ Fritjof Capra, *The Science of Leonardo: Inside the Mind of the Great Genius of the Renaissance*, New York, Doubleday, 2007.

the reduction of needs to markets/marketable needs and *multiplication of markets separately from the needs*.

Actually, the mechanism of accepting the lack of power in the name of the society's unquestionable foundation, the private property, has altered the logic of the submissive people – including intellectuals and, paradoxically, researchers – concerning the human status. Clearer, these people do not relate the concepts and criteria of social representations and neither the characteristics of humans *within* the social relationships. But all of these are generated by the general education in the spirit of private property. For instance, people – including the intellectuals and, paradoxically, researchers – consider that vacation is a human right and thus do not hesitate to speak about the right to vacation; but *at the same time* they embrace the idea that the health care is a lucrative service, similar to other lucrative enterprises. The mainstream education mentioned above is perverse, because it does not explain that in the private property system the vacation could be a right since people pay their holidays etc., while the health care is not a right, because if it were considered as such it would no longer be profitable.

But if people are accustomed to this type of logic – with double standards and social exclusion of them/ the humans “who matter” – they do not control the world, even if it is about people who benefit from their “rights”: they are simply alienated, considering the world a lot of goods/services they buy and consume. Is it here a radical difference between these humans and the pre-human forms of life?

4. Objects and their use

Objects are mentally created, and then materialised, in order to develop the human environment and thus better use it and fit within. The practice that used and uses more up-to-date objects was and is considered the proof and the sign of the human control of the world.

But the practice to create and use objects is not only the result of knowledge, but also of the power relations – and as a constraining factor –.

Theoretically, the mental design and the material creation of objects mutually certify their reason to be. They allow a larger and a deeper understanding of the macro-, micro- and meso-worlds of the humans. The human control of the world is thus the control over the products/the human objects: over theories and mental design, over material/real objects and over practices of creating and using those objects.

People create the objects and then these ones “mediate” their relations with and within the world. When the power relations interfere⁸⁵ within these relations of humans and their objects, the subordinated part of these relations does not control the mediation of objects: and thus, neither the world.

The present eulogies to the new information, nano- technologies and robotics prove their really extraordinary features not with the knowledge process of the informational level of reality but with the objects created by them. This is a normal manner of proving the human exploits, is it not? However, neither the objects from the human environment must be treated according to the technology leading to them, *as if* this technology would respect only the original *reason to be* of objects corresponding to human needs. The reduction of the value of technology to the resulting objects consciously confuses the presumption that, since technology starts from the human need that must be accomplished by the objects, it would accomplish only the original reason to be of objects, with the fact that technology is framed by the private interests which impose the view about the objects.

⁸⁵ Generally, all social relations interfere in all these social relations and, of course, in the relationship between people and their objects. This interference is at the same time a mediation.

When a human being looks permanently his/her mobile phone/ smartphone / tablet etc. in order to make something he/she could do without the above device (to go somewhere where the place is already clear, to hit a nail or change a light bulb, to make a soup not for the first time or to imagine a dress), he/she becomes dependent on a mediating object. Actually, the dependence on objects is strengthened in order to *legitimate the dependence on the power relations*, the transfer of the *necessary* human effort on a mediating object impoverishing him/her.

But would still be the need to know how to hit a nail etc.? On one hand, this is no longer necessary because of the minimalist fashion where there are no pictures or objects to hang in the rooms, while the masters have servants who do all of these in a different manner. On the other hand, there are/will be robots. As well, if there is no longer a need, there is no more concern and thus the human abilities are declining.

The example with the nail is certainly childish, but if we confront the permanent checking and consulting of the smartphone and the real *cognitive, attention, imagination* abilities of people, we see that *these ones did not improve following the moment when the smart phone became inseparable from people*. This situation is certainly not the direct result of the automated relationship between the individual and the communication device, but it is equally obvious that it is mediated by this device.

The development of videogames – advertised as “the most addictive...”, thus the best, and many of them being war games – as a lucrative industry has exceeded their initial educational reason. They “educate”, obviously, and not only by compensating the surrounding violence with that of games where one can exhibit one’s own violence without fear – as their psychological argument sounds – but also by developing a simplified, poor in logic and words, image of the world. How can the addicted people to such videogames think to the control of the world, since in fact in such videogames everything is “under control”?

Or, the cyber-physical systems – involving complex hardware and software problems – pose also the problem of their use. This use is unquestionably necessary in the management of infrastructure and of distribution of water, power etc., in the industrial management, in the monitoring of complex systems as agriculture, animal husbandry, transport of people and goods, health care. But is every programming of the home infrastructure necessary? Or shouldn't people discern what objects and where and when should they use them⁸⁶? Is it not necessary to be careful in order to not consider as “normal” and “must” every gadget that in fact does not improve one’s own life and time? This does not mean fear of the new technologies: on the contrary, it means only the search for better conditions to implement them⁸⁷ and, at the same time, to not become subjugated by them.

The control of the world implies first of all the alert position in front of the given theories, objects and habits. The new “normal” must not become automatically assumed, but should be questioned first.

⁸⁶ A disabled person needs a system that automatically opens / lifts the garage shutter when he arrives home; but a healthy person really needs physical exercise after sitting in the car. Thus he must refrain from using automatically all the existing objects.

⁸⁷ The larger bandwidth allowing a good tele- communication is necessary, and the pandemic has showed this. In fact, not the larger bandwidth has led to the economic crisis of the many restaurants etc. based on face to face relationships – as however is James Altucher, *NYC is dead forever. Here’s why*, <https://nypost.com/2020/08/17/nyc-is-dead-forever-heres-why-james-altucher/> position – but the private economic logic that cannot solve in an integrative way the many human activities.

5. The control of the world with science

This title must not be elaborated here; it expresses the universally assumed representation of both popular culture and learned specialists. Its reason to be here is only to draw attention on the fact that with all the huge achievements of science in an *accelerated* way – thus, in the last two decades of the new millennium – the deterioration of the world in terms of both nature and the situation of people took place galloping. Consequently, science – and technology, of course – can no longer be described as the only vector of beneficial changes of the world, and even less as the vector of the human control of the world.

Rather it is more and more visible its *instrumentalisation* by economic and political circles. But taking into account this fact, and also the fact that within the mainstream ideologies the *idea* of distrust in science – i.e. in the rational thinking all the way as well as in the proofs on which science is erected – is *largely* propagated (paradoxically, *together* with the technophile idea that the new technology will solve everything), the empirical problem of trust in science becomes more acute; and thus, the same happens with (the problem of) the human control of the world. *How can people control the world if the scientific knowledge seems to no longer be reliable?* We remember the “scientific papers” which have promoted a drug or another⁸⁸ – and this was not the result of step by step understanding the coronavirus called Covid-19 –: the scientific error is possible during scientific research, including in the criticism of the phenomena of scientific error – however, it not the error that is important here, but the fact that the “scientific” promotion of drugs has clearly reflected the material interest of the companies producing those drugs and vaccines. Not even saving one's own person is possible, so much less the human control of the world when either people do not trust in medicine and the necessary procedures and drugs or they take the inappropriate drugs and vaccines. So just on this situation have the promoters of the distrust in science, drugs etc. flourished. It's only when the *health care at the higher standards is public, universal and free*, that people can trust the scientific debates as being only scientific.

How can people control the world if the scientific knowledge demonstrating the harmful results of the official policies is silenced in a way or another? How can people control the world if the integrative view on and of scientific knowledge is avoided by the systematic fragmented images transmitted from the top?

How can people control the world if *with all the scientific explanations and warnings*, the *result* is that since 1970 the Earth has lost 68·% of the animal species and that 80·% of the world wastewater is discharged untreated into biodiversity-rich freshwater that is then used to irrigate croplands and disturbs the coastal ecosystems⁸⁹; while in order to prevent *further* losses to terrestrial biodiversity, an *integrated* strategy is needed immediately, consisting of increasing the extent of land under conservation management, of restoring degraded land and generalizing landscape-level conservation planning⁹⁰? How can this *integrated* strategy be implemented worldwide since just the logic of capitalism has generated the massive deforestation, degradation of

⁸⁸ See the neat bibliography in Michel Chossudovsky, “LancetGate: ‘Scientific Corona Lies’ and Big Pharma Corruption. Hydroxychloroquine *versus* Gilead’s Remdesivir”, 5 July 2020, https://www.globalresearch.ca/scientific-corona-lies-and-big-pharma-corruption-hydroxychloroquine-versus-gileads-remdesivir/5717718?utm_campaign=magnet&utm_source=article_page&utm_medium=related_articles; and in Elizabeth Woodworth, *Remdesivir for Covid-19: \$1.6 Billion for a “Modestly Beneficial” Drug?*, August 01, 2020, <https://www.globalresearch.ca/remdesivir-covid-19-1-6-billion-modestly-beneficial-drug/5717690>.

⁸⁹ *Nature Is Unraveling': New WWF Report Reveals 'Alarming' 68% Plummet in Wildlife Populations Worldwide Since 1970*, September 10, 2020, <https://www.commondreams.org/news/2020/09/10/nature-unraveling-new-wwf-report-reveals-alarming-68-plummet-wildlife-populations>; the *Report* at <https://livingplanet.panda.org/en-us/>.

⁹⁰ David Leclère et al., “Bending the curve of terrestrial biodiversity needs an integrated strategy”, *Nature*, September 2020.

land and infringement of the conservation laws (let alone the planning) as only through these malignant processes could and can the private companies gain, destroying not only the environment of “far away countries” but even of those where they originate from? Is it not more realistic to think that “... A broad drift into a de facto era of managed extinction events dawns”⁹¹?

Could a more equitable world trade (the “win-win” strategy) be implemented *within this logic* when on one hand/first of all, that strategy collides with the zero sum logic of capitalism and on the other hand, the competition of that strategy is not accepted by the private interests whose “vital space” was lessened through the new “win-win” competitors⁹²? Is it not because of this that the attacks on the internal systems of the countries promoting that strategy have taken place and are taking place?

Nowadays, it is not the “human nature” the one that generates the fear of the reality of science, i.e. of the kingdom of the possibilities it discloses and constructs, but the *private control of science* – as of every other means of existence – which chooses to fund and bet on those research and discoveries that may quickly be converted in profitable exchange-values. The programmes related to IT and nano-technologies always insist on the *commercialisation* of the products of those domains⁹³, presuming the continuity of the private logic of economy and society⁹⁴. While the research that brings an overthrowing of the present logic are much less funded and silenced⁹⁵, even though that research tries to accommodate with this logic (it never considers the waste of resources, land and water by the production and use of armament) but *inherently* it denies the capitalist logic⁹⁶.

Finally, the role of science in the human control of the world is not fulfilled through supplying the public with fake theories aimed to become the new fashion substituting valuable, proven and efficient concepts and theories. In science, new concepts are developed if, being *semantically* correct – that is, conveying meanings within a proven / demonstrable theory – they refer to *new* aspects, *not covered by old concepts* that do not account (or not satisfactorily) for these new aspects. For example, *chaos* theory is the theory of complex systems in which the behaviour of dynamical systems also includes the *order* / a certain order, where a repetition of relations may be detected, as if those relations conformed to certain rules. To reduce the world/the systems analysed by science only to chaos or only to order, or only to one aspect or another, to not take into account the both dynamic and concomitant dialectic of aspects lead only to a caricature of scientific

⁹¹ CCC2 Irreversibility, Series Editors: Tom Cohen and Claire Colebrook, in Bernard Stiegler, *The Neganthropocene*, p.4

⁹² The outsourcing of medical materials and drugs in countries where the labour force is cheaper and then the final products may compete with other private companies – as well as their price can be raised more substantially – was a conscious and logical attitude of the European and American firms and states, while the countries receiving the orders for drugs and medical materials succeeded to have industries and industrialisation which otherwise would have accomplished more difficultly. The pandemic has once more shown the irrationality of development subordinated to the private profit. Yes, the outsourcing was and is inevitable in the capitalist logic, while not the “re-nationalising” of industries in the same logic would be the solution for a sustainable development: but only for a temporary capitalist “growth”.

⁹³ National Academies of Sciences, Engineering, and Medicine 2020. *A Quadrennial Review of the National Nanotechnology Initiative: Nanoscience, Applications, and Commercialization*. Washington, DC: The National Academies Press, <https://doi.org/10.17226/25729>.

⁹⁴ The first domains benefiting from IT etc. are named always the military, security, intelligence.

⁹⁵ *Towards an integral approach to sustainable agriculture and healthy nutrition: vision of the Scientific Council for Integral Sustainable Agriculture and Nutrition*, <https://research.wur.nl/en/publications/towards-an-integral-approach-to-sustainable-agriculture-and-health/fingerprints/>.

⁹⁶ *Solar Foods receives world's most prestigious design award*, 06/09/2019, https://solarfoods.fi/our-news/solar-foods-receives-worlds-most-prestigious-design-award/?utm_source=hs_email&utm_medium=email&utm_content=76470704&_hsenc=p2ANqtz-9Ng8d-kTtjDUZPbtvnbMhMVJ9d8FgLqEqZleIOuGnGcTkh4s56wIUy1ft8uJ-aKiiA7fRINfyFecmgd6tEm9ClzyqbA&_hsmi=76470704; Solar Foods, Newsletter 7/2020, *The New World Food Map shows the future of protein production*; Solar Foods, *Liberators of protein production from thin air*.

comprehension⁹⁷. Actually, this type of perspective on science emphasises the contradiction between, on one hand, the necessity of the simplicity/elegance of the scientific comprehension and the necessity to surpass the understanding of the world through (elegant) formal causal models (and through the multiplying of concepts that repeat already existent theories) and, on the other hand, the dialectical complexity of the world.

6. The *what for* in the scientific treatment of the world

To question the *what for* of things – activities and objects – is a very technical, that is, scientific question, as long before Aristotle has demonstrated. There are precise domains where this question is cardinal⁹⁸, but it is present in all the scientific and technological areas. The *what for* is an *integrative* question. It doubles the other questions searching for causes and based on the discriminative ability of the intellect. In their endeavour to understand the world, the humans have circumscribed and even separated the aspects: which were grasped only in this manner. This is the reason of scientists' and technologists' listlessness towards the separated, and isolated from the whole of existence, use of the results of thinking.

The pandemic has shown the absurdity of this *separated/isolated* approach: first, the counter-productive and even harmful separation of the “technical” function of human activities from the complex psycho- and sociological relationships and mutual influences which are *indestructible components* of these activities. The technical function and means of electronic/IT communication – boasted not only by the IT engineers but also/especially by the IT firms in order to increase the profit from the upsurge due to the “social distancing” – showed to not be the *substitute* of direct, face to face communication. They were and are only its adjuvant, as qualitatively proven to be necessary as they were and are. The isolated “humans” helped by sophisticated robots – as in Asimov's dystopia *The Naked Sun* (1957) – but incapable to have and express rich feelings and values that may be born only in the framework of rich inter-human connections: the pandemic has shown that this type of “exosomatisation” is neither fruitful, nor desirable.

Secondly, the pandemic has emphasised what do “essential works” mean, their importance. But what is *essential* for humans? It is that which helps them to survive and *to survive in the best conditions possible*, and thus *to control their existence according to the human values of the good, the truth, the beautiful for every human being and thus, for all of them*. The pandemic has emphasised how aberrant was/is to consider the military/war activities as essential. As well as – to despise the service works without which those working at home could not do that. And the pandemic has underlined how necessary was/is to evaluate the activities according to the criterion of essentiality for the human surviving of the human beings, and not according to the criterion of private profitability, meaning also the size of the salary. *The human control of the world depends to a large extent on the integration of the criterion of essentiality in the evaluation of all the inter-human and human-nature relationships*.

⁹⁷ When an author gives as a model of “harmony” a company / organisation that manages the event in a simple information transfer system, it is obvious that he does not consider either the simplicity or the closed nature of this system, so neither the contradictions that explain complex systems. See for example the “chaordic” theory in business management (including human resources management), which took the idea of coexistence of disorder / chaos and order from chaos theory, to signal the difficulty of keeping the company stable and viable as long as possible and steps necessary for this. Dee W. Hock, *Birth of the Chaordic Age*, Berrett-Koehler Publishers, 2000 - the company model is the author's company, Visa International, international money transfer between banks. However, the control of a company is not the sign of the human control of the world, is it?

⁹⁸ Brian Lawson, *How Designers Think: The Design Process Demystified* (1980), Fourth Edition, Amsterdam etc., Architectural Press – Elsevier, 2005.

Thirdly, the pandemic has shown that the *technical aspects of activities can no longer be separated from the values which ground the human control of the world*: in all the local places – which, every one of them, are “the most beautiful in the world” – and thus in the whole world. These *human* values are substituting those of private and domination-submission with all their pretexts. Here only a specific human value is considered: that of *care* (having a long philosophical history) as carefulness, charge, solicitude, anxiety, and also as concern, and wariness. But also as *caress*, since – as we saw in the pre-human formation of the human discontinuity – without support, comfort, solace, endearment, no materially fortified existence would resist. Caress is an *integrative* value, too⁹⁹. For this reason it cannot be separated from the evaluation of human activities. But the modern education – subordinated to the private logic of world capitalism – has been constituted mostly within the pattern of *separation* between the technical aspects of “knowledge” and the value aspects, including the separation between questions, between the “technical” questions and the question of *what for*: and thus, between the “technical” functions of humans and the function of their integration within the world.

7. Epilogue

The human control of the world is the *human control of knowledge*. This means the development of the process of knowing, but this also means the development of the human *transposition* of knowledge in the world. The *separation* of these two processes took place not only because of their relative autonomy to each other, but also – or even foremost – because of the formation of power relations/domination-submission relations in the known historical contexts. And certainly, *the power relations have marked both the development of knowledge and its transposition in the world*.

The present aberrant phenomena of continuity and, thus, intensification of the exploitation and depletion of nature – *as if their causes and results would not be known* – and the huge human socially induced sufferings and destruction, *as if their causes and results would not be known*, seem to signal the antagonism between knowledge and the world/that knowledge would not be the *driving force* of the sustainability of the world and its human control. At any rate, those specialised in the formation of knowledge, the intellectuals¹⁰⁰, are not that force.

They never were, irrespective of the influence of their ideas and the transposition of specialised knowledge into practical processes. The reason – their membership of the intermediary bureaucratic strata and their subordination to those who paid their effort¹⁰¹ – is well-known, too. This explains why in the 19th and 20th century the driving force of the social transformation, directed in such a way that knowledge could become the underlying driving force of the human control of the world was not the intelligentsia: because it was not / not only / not first of all proletarian, i.e. the sale of its power of knowledge brought them more than what was needed daily/more than to live from one day to the next¹⁰². With the contemporary development of

⁹⁹ The question of the Anthropocene is how to exit from the Anthropocene qua toxic period in order to enter into a new epoch, Bernard Stiegler, *The Neganthropocene*, p. 45.

¹⁰⁰ See the philosophers: who have emphasised aspects of life (from the viewpoint of their education and historical experience) and thus approached to or moved away from the reason to be of things. They, too, have accepted and become accustomed with the fragmentation of the world; even though they were interested to know the principles.

¹⁰¹ Robert J. Brulle, “Institutionalizing delay: foundation funding and the creation of U.S. climate change counter-movement organizations”, *Climate Change*, February 2014, Volume 122, Issue 4, pp 681–694.

¹⁰² This aspect – that “the proletarians” would experience salaries enough only for their daily life – may be a reason of refutation by those who think to the Western social state when the workers, too, could have savings, holidays, houses etc. They forget, however, that irrespective of the size of the salaries allowing “Ford’s car” etc., the proletarians need to permanently sell their labour capacity/force because they do not control/do not master/ do not own the means of

productive forces (namely, also science and technology) annulling the historical scarcity and at the same time because of the private, restrictive and aberrant ownership of the world resources and productive means, the labour force becomes intellectualised and, in the same time, the intellectuals “become” mostly proletarian from the standpoint of everyday constraints. Namely, irrespective of their savings and traditional welfare, not only that they ought to enter the race/intra-class competition for selling their knowledge / labour capacity, but also they face a *more and more uncertain economic and social environment for this sale and competition*. However, the education of intellectuals has induced them the idea of their superiority, with due privileges, and their “middle-class”¹⁰³ economic position. Accordingly, even though a big part of intellectuals can make a (more or less) formidable critique of the state of the world, it stops in front of the solutions¹⁰⁴.

production and, more and more nowadays, the means of the existence at all. In this respect, the intellectuals too are proletarians but, because of the historical separation of the physical and intellectual work, they were special proletarians – and they considered themselves as being different from and superior to “the workers”.

¹⁰³ We do not forget that if at its origin the term “middle-class” was used to describe the bourgeois owners of their lucrative assets, toward the beginning of the 20th century it already signalled middle size incomes, able to save and to purchase more than the necessary goods for surviving. In this way, this neutral meaning annulling the original class denomination has definitely sealed not only the self-image of intellectuals but it became also a priority in the mass education in the Western/Western style countries.

¹⁰⁴ For example they enrolled into the well-known campaign “Think globally, act locally”, assuming the odd logic that the global change would occur only by the summation of fulfilled local programmes in species protection, garbage collecting and processing etc. They did not understand that the global change is the result of a global view integrating more than those local programmes. As they did not understand that the ecological changes cannot take place maintaining the global warfare instruments and practices.

Other example is the benevolent economic solution of supplementary income added to every wage-earners in order to raise their purchasing power and thus boost economy (the “social credit system” of C. H. Douglas between the two WW, *somehow* similar to the present guaranteed minimum income), a fantasy that does not explain the source of this huge credit and neither how will the inflation be “short circuited”, and nor how would the intra-class competition at the level of employers take place.

Other example is Thomas Piketty’s “solution” after the description of the evolution of capital (its yield) only within a state/society, and not at the level of world system. For the author, capital is the wealth (used for developing further the production) as “the source of economic logic”. Piketty has considered the patrimony/wealth realized following the salary as having the same identity as the wealth of the employer. In order to surpass/to lower the wealth inequality and to support the continuity of capital accumulation and utilisation, the solution – for the 21st century!! – is the social state, the progressive tax, the world taxing of capital. How can all of these be achieved in the present level of system crisis – that questions the basis of this system? (Thomas Piketty, *Le capital au XXI^e siècle*, Paris, Seuil, 2013).

The same manner to avoid the analysis of structural relations – which explain the realization of the goal of capital as maximisation of profit, and the competition between capitals, including at world level (while the salary and the goods bought from salary are not capital) – was assumed by Branko Milanovic, *The World Is Becoming More Equal*, August 28, 2020, https://www.foreignaffairs.com/articles/world/2020-08-28/world-economic-inequality?utm_medium=newsletters&utm_source=twofa&utm_campaign=The%20World%20Is%20Becoming%20More%20Equal&utm_content=20200904&utm_term=FA%20This%20Week%20-%20112017 who found as the argument of globalization the reduction of poverty in the third world, without mentioning that a big part of this reduction was made in China (thus without mentioning the systematic and unitary redistributive policies in this country), neither that just the delocalisation, i.e. the lower and much lower wages in the third world than in the Western countries, has pressed the lowering of these ones too and generally the reduction of the welfare state, and nor that to discussing about globalisation without mentioning its present capitalist character is theoretically worthless.

Globalisation is inherent, since science and technology are and require trans-national communication and development without barriers. But the capitalist globalisation does not lead to the global welfare and to a global coherent ecological policy. The fact that this capitalist globalisation is countered in the mainstream ideologies with protectionism – impossible and generating only war and more waste – does not motivate the choice of capitalist globalisation.

Actually, and operating with charts, it was showed that wealth has become increasingly concentrated and that global inequality has increased, even as Milanovic’s former research has explained (Michael Roberts, *The Wealth of Nations*, <https://thenextrecession.wordpress.com/2018/02/09/the-wealth-of-nations/>).

These are the “earthly” processes – and not the simple ecological understanding or the simple anti-war sentiment or the simple compassion in front of the social inequality – which allow knowledge to be the driving force of the human control of the world. In other words, the modern scientific understanding of things was framed by a private / “speculative” (in both metaphorical and the proper sense) economy that *transposed* to science this feature making it “corrosive”: far away from the ordinary people – which are intelligent, able to understand and apply science – and focused on the marketability of their own products¹⁰⁵.

However, knowledge as such does not change the system of the world – i.e. the *human-nature* system and the *individual-communities-species* system – so as to solve its fundamental and irreconcilable contradictions generated by capitalism. If we take the ardent example of the back to school in the present time of the pandemic we once more observe the fragmentary and incoherent approach of the capitalist governments. As the inevitable coming of this or another pandemic was not prepared by assuring to people not only free and high quality health care but also healthy food, air, water, sanitation and decent housing, as well as a thorough scientific education, thus a preventive health care (letting aside the masks and the health and medical infrastructure and increase of staff), so the necessary back to school was not prepared by the reconstruction of school infrastructure and by the increase of staff¹⁰⁶.

If the next generations will have an altered mind – because of the direct and indirect micro and high frequency radiation, producing not only illnesses as cancer, but also a transformed, lowered, broken down capacity of *memory* and *ratiocination*; and also a lower capacity not only of reasoning, but also of *imagination*¹⁰⁷, since the effortless spectacle of images and not the richness of meanings through words will challenge the human spirit, infantilising it – it is more probable that they would be sealed by the present power relations in the long run. This is a reason of the existing policies which do not change anything, not even the slightest things in the capitalist course. Just because the humans are intelligent, these policies aim both to *lowering the rational bar of education*, the understanding and expression of meanings *through words and arguments*, and to *substituting the human effort with entertainment*: namely, to reduce knowledge / the meanings to images and to induce entertainment addiction and erase the creation addiction. Through this type of individual aspiration that dissipates the social ideal, the *human effort as effort of creation* is reduced in a polarised system: many toiling, few creating, in the frame of a strong dependence on objects. And just this type of education leads to both the *shortage of labour force specialised in domains requiring effort and knowledge* – and, inconceivably, the unemployment existing in these domains, too – while there is an inflation of MBA-s in marketing, advertising, public relations and political science.

But also Philip Alston, *The parlous state of poverty eradication*. Report of the Special Rapporteur on extreme poverty and human rights, 2 July 2020, Human Rights Council, pdf, showing that extreme poverty is not being eradicated and that the international community mistakenly gauges progress in eliminating poverty by reference to a standard of miserable subsistence rather than an even minimally adequate standard of living”. And also Carter C. Price and Kathryn A. Edwards, *Trends in Income From 1975 to 2018*, Rand Education and Labor, September 2020, pdf.

¹⁰⁵ Isabelle Stengers, « Pragmatiques et forces sociales », *Multitude*, 23, Hiver 2005/4, pp. 115-124, <https://doi.org/10.3917/mult.023.0115>; Isabelle Stengers, William James, *Une autre science est possible ! Manifeste pour un ralentissement des sciences (suivi de Le poule du doctorat) (2013)*, Paris, La Découverte, coll. « Sciences humaines et sociales », 2017.

¹⁰⁶ This is the reason of the transformation of school into a hybrid instruction, with more technology but fewer teachers, developing individualism as responsibility only towards the individual ascension, *Adieu l'école de la République, vive l'enseignement hybride !, Apprendre dans la start-up nation*, 4 septembre 2020, http://nouspersonne.fr/doc/ENSEIGNEMENT_HYBRIDE.pdf.

¹⁰⁷ Ana Bazac, « Trop ou trop peu d'imagination ? Des neuro-sciences à la critique de l'unilatéralité de la conscience », in Jean-Yves Beziau et Daniel Schulthess (éd.), *L'Imagination*. Actes du 37e Congrès de l'ASPLF (Rio de Janeiro, 26-31 mars 2018), Londres, College Publications, 2020, « Academia Brasileira de Filosofia », vol. 1, 639-656.

Knowledge *is* a driving force of the control and sustainability of the world if we do not treat it in an undifferentiated manner as “human knowledge” but clearly grasp the distinct origins of its contents and forms as well as its external constraints.

We should not fool ourselves imagining abstractly that we/the humans control the world through knowledge (i.e. science, including the science of know how). *Knowledge always means application*. But since a huge gap between *knowledge and application took place, knowledge did not lead to the control of the world as it presents nowadays*.

We should not fool ourselves that by knowing some deep principles of the functioning of the world we “arrived” to the understanding of the world and thus to its control. Perhaps the simple counter-example of the scientist thinking scholarly problems but no longer having water from the tap or electricity for his/her laptop makes us to think to other fellow humans who currently do not have decent access to water or electricity. This counter-example is very important from a philosophical standpoint: because the philosophical tradition has developed the theory of *recognition* (of others, of me – the speaker/the philosopher) but not the theory of *mental transposition* of the individual subject (me – the speaker / the philosopher) into not only other fellow humans but rather into humans in *other conditions*. A possible transposition into other fellow humans has led to the theory of compassion or to the radical ethical theories from the golden rule to Kant’s categorical imperative. But there is a difference between the transposition into other fellow humans and the transposition of the “I” into other conditions. The challenging example is our imagination of being fellow humans who have no access to the highest level of health care: *the knowledge exists, but they/we cannot pay for it*. Do we / they, as individuals, control the world, namely not the abstract huge world but even our little, but unique, world?

Therefore, the control of the world starts from that exerted by the individual (from “my” control). But how can be asserted that the individuals would not control the world – at least their world – when he / she solves problems related to this world and concretely to his / her fulfilment of his/her tasks and purposes? The individual controls his/her world, of course, *within the limits* given by the *individual possible* within the given conditions. But the individual possible is *limited*, in its turn, by the possibilities given by the environment/community where the individual lives. If there is no access to water in the neighbourhood he/she lives, the individual possible is different from the individual situations in the neighbourhoods with access to water: namely, the individual has more time to think to, let’ say, philosophical problems. And the community’s control of its own world is *limited* by the ways in which the larger communities, in fact, the human species control its own complex, social and natural world.

The *dialectic* of the *individual-community-species* control of the world is thus understandable: we, as individuals need the other fellow humans not only as our loved ones, not only as (mutual) service providers – as in the old representation of the division of labour, but that may sometimes be surpassed¹⁰⁸ – but at the same time the other fellow humans as our species; because without this third level of control neither the first two can be carried out.

¹⁰⁸ From the facetious but meaningful piece of William Harris, *The Diary of a Retired College Professor*, <http://wayback.archive-it.org/6670/20161201174643/http://community.middlebury.edu/~harris/Humanities/MyToilet.html>, let’ cite a philosophical proposition: “When I was in college, I admired the style of Hippias the Elean whom Plato records as a man who made his own sandals, ran and won his race and Olympic contest, and topped it off by reciting an ode of his own making to music which he had composed. I know that is not the manner of our world, but I have always felt Hippias was on the right track”.

In this dialectic, the individual control once more may fool us. Since all the individuals have troubles – as the domestic ones told by the late Professor Harris – some people could think that there would not be any difference between the human troubles, namely, “their” troubles and those of other fellow humans who, for example, have no access to water and have to stand in line every day for the precious substance and/or carry it from a distance. However, there is a big difference between the *temporary* troubles and the *permanent* ones.

The individuals try, obviously, to solve their problems: *in the given conditions*. But this individual struggle to cope with the problems does not necessarily lead, through the way of composition, to the community’s control of the world and lesser to the species’ control. Once more, we should not confound the individual fulfilment of tasks and ends with the control of the world.

However, does this mean an “absolutely substantiated” relativistic conception of life? Would this mean an entitled individual *carpe diem* strategy and a “legitimate” representation of the disappearance of the support points in the human behaviour, about a chaotic movement of the world? Is there no order at all?

There is no the place to elaborate this aspect. Nevertheless, the concept of order – *always from the standpoint of every human* – is, from the oldest times, what is harmonious, suitable in one’s world, “proportional”. From this anthropomorphic meaning, the concept was translated also in the world, *as if* the cosmological logos would have directed the human world; though in the Greeks’ concept of *logos* the relationship between the cosmological order and the anthropological one was two-way. Anyway, order meant the establishment of suitable configurations at cosmological scale and possibility of control at a human one.

As we saw, the human control cannot ignore the species’ control of the world. *If the species lasts, the individual finishing his/her life does not fully die. But if the species’ life is endangered until its extinction, all the unique knowledge of the species and all the individual traces within the species vanish.* Consequently, the problem of the human control of the world cannot be seen as an abstract inference from the individual control. *The species’ control is decisive.*

Who are those who make the above mentioned *abstract* inference? They are those who, however educated, support the irremediable destruction of the order of the *human species in its entire environment* in the name of the individual control of the private property. They are those who mistake *their* conditions which *seem* to them to illustrate the species’ control with this control as such; they *think* that the species’ control is assured, but they do not think about other individuals and whole communities which do not have the conditions of the first. *A critical view about our own beliefs is thus absolutely necessary.*

Why this last so unflinching expression? Because – and all the empirical proofs, scientifically analysed, have proved that – without the species’ control of the world there is not and will not be human control of the world at all. *There is no control of the world* when billions of humans have no access to water, sanitation, decent housing and decent life motivated by creation and effort¹⁰⁹, when they are bombed and injured, assassinated, when the governments spend public money for wars, armament and entertainment places. *There is no control of the world* when, *despite the development of knowledge about results and substitutive means*, the *extensive* exploitation of resources took place at an expanding level in the last 40 and even 20 years. *There is no control of the world* when the wars – the historical solution of the *extensive* civilisations which have glorified them – became barbarously and definitely destructive not only in the 20th century but, inconceivably, in the new millennium. *There is no control of the world* when, even after the war laws have appeared a terrible infringement of these laws took place: that hit not only the species, not only the communities but also the individual: because the untimely disappearance of the

¹⁰⁹ Certainly, it is not about a plea for a tiring, routine, automatic work that can be replaced by technology, but only about what the popular wisdom has concluded: rest is pleasant only after work (creation, creative human relationships).

individual weakens the species and the communities, the actualisation of the human creativity is irremediably minimised. *There is no control of the world* when a historical solution like the private property was transformed into a virus devouring its host and generating the vulnerability of the human species – and thus of communities and individuals – till the point of no return.

The knowledge necessary for the control of the world is, in fact, the knowledge of the perspectives of the human world: has this world a future at all? Here it was pointed out the concept (and fact, of course) of *unsustainability*¹¹⁰, as not only an *ontological* feature of this world, generating its finitude and end, but at the same time as *acceleration* of this feature. The knowledge of the perspectives of the world has, however, two branches: one is that of the understanding of what kind of finitude/end is specific to the human world, and the other is of the concepts and level of the understanding of the perspectives.

This last branch is that which seems to give us some hope. We already speak of new patterns of thinking departing from the habitual linear mechanist pattern: plural/complex causality (complex web of causality¹¹¹), interdependence of objects and subjects, dialectic of coexistence and overcoming, thresholds¹¹² – including as critical rates – in the dialectic of quantitative accumulations and qualitative leaps, including qualitative differences between quantitative levels, interdependence of different types of processes, breaking points and accelerations¹¹³, threshold effects, bifurcations and bifurcation effects, cumulative feedback, self-reinforcing feedbacks, loops, tipping points, and nonlinear dynamics, turnover time, composition of causes, partial systems instability and system-wide instability, external perturbations magnifying the initial disturbance and the rate of environmental change exceeding a threshold – i.e. the capacity of evolutionary processes to adapt/ to keep pace with changing conditions¹¹⁴.

However, even these patterns of thinking were drowned in the mainstream conception and control of science that subordinates them to the fake views described in this paper too, including to the fragmented manner of knowing, in fact the only one that are suitable to the restrictive and fake views¹¹⁵.

Knowledge – and in fact even philosophy, including as revealing the meanings and interpreting them, is *scientific*, i.e. logical/rational and an absolute and never ending inquiry of everything in ontology and epistemology – is, since it results from the attitude towards existing knowledge, first of all *deconstruction*. Simpler, even the scientific knowledge is deconstruction/ has

¹¹⁰ John Calvelli, *The Future is an Image: Unsustainability, Plasticity and the Design of Time*, New York, Dresden, Atropos Press, 2015.

¹¹¹ D. H. Erwin, *Extinction: How Life on Earth Nearly Ended 250 Million Years Ago*, Princeton Univ. Press, 2006.

¹¹² Daniel H. Rothman, “Thresholds of catastrophe in the Earth system”, *Science Advances*, 20 Sep 2017, Vol. 3, no. 9, e1700906 DOI: 10.1126/sciadv.1700906.

¹¹³ Will Steffen, Johan Rockström, Katherine Richardson, Timothy M. Lenton, Carl Folke, Diana Liverman, Colin P. Summerhayes, Anthony D. Barnosky, Sarah E. Cornell, Michel Crucifix, Jonathan F. Donges, Ingo Fetzer, Steven J. Lade, Marten Scheffer, Ricarda Winkelmann, and Hans Joachim Schellnhuber, “Trajectories of the Earth System in the Anthropocene”, *PNAS*, August 14, 2018, 115 (33) pp. 8252-8259; published ahead of print August 6, 2018 <https://doi.org/10.1073/pnas.1810141115>.

¹¹⁴ *Mathematics predicts a sixth mass extinction*, 22/01/2018, <http://www.defenddemocracy.press/mathematics-predicts-a-sixth-mass-extinction/>.

¹¹⁵ It is not about the method of focus on the selected system in order to better know it: it depends on what is the focus integrated.

a deconstructive inner aspect, because every scientific research contradicts or supports existing theories. Deconstruction is refinement / nicety towards words, images, representations, theories, institutions, habits and behaviours. But it is only one aspect of the knowing process. It is somehow autonomous from practice/the human intentions and attitudes, but at the same time insufficient, as any knowledge lighting only a versant; as decomposition, radical criticism of the existing knowledge, it is absolutely necessary, but “life” still goes on according to the old patterns. Thus deconstruction must tackle the *effects* of knowledge; it must be united with the science (the wisdom?) of *kairos*, the mandatory time for giving to life the meanings giving its worth to be lived; only in this way the *individual* life is *survival*: the most intense life possible, that to both enjoy life and give to those remaining a wealth of meanings/knowledge. Is this science of *kairos* not the old urge to change the conditions of life in order to enjoy its meanings and to bequeath to those remaining more meanings which help them to survive?¹¹⁶

But letting aside this “too philosophically” expressed message, knowledge arrives to be the driving force of the control of the world when its *discontinuity – the new theories and applications – is developed not only towards old/not in fashion theories, but also towards the in fashion ones, towards the “axioms”/clichés of its present stage on which it is striving to give more*. Both the level of the present knowledge – that includes its meta / critical view on its own exploits, as well as the integrative view – and the stage of the present world require the *re-thinking* of every theory and aspect and the *questioning of the present “axioms” / clichés*.

The representatives of capitalism behave with their own populations as if these ones were enemies: they starve them, they cause them suffering, assassinate them directly and indirectly: even during exceptional periods as the present pandemic¹¹⁷. This is not control of the world, and lesser a human control. But capitalism cannot stop to function within this logic: if it did, it would perish and the “reforms” are done only to continue the private profit extortion and dominance.

There are two directions given in the mainstream ideology: the *illusion* that the change for the better of capitalism (as in the “inclusiveness capitalism” theory¹¹⁸, or the “sharing economy” realised through AI technology¹¹⁹) is possible; and the promotion of *despair* and *fatalism* through the *theory of catastrophes*¹²⁰ where the foreseen disorder is the displacement from a capitalist order to another one, the displacement as such being considered disorder.

But some ones consider that a “sustainable retreat”¹²¹, i.e. construction of an absolutely new (ecological) model of the human life on Earth, is not the sign of disorder, but of the only practical

¹¹⁶ Jacques Derrida, *Apprendre à vivre enfin*, Avec une préface de Jean Birnbaum, Paris, Galilée, 2005.

¹¹⁷ Arsalan Ghani, *Climate change in India – no solution under capitalism*, 10 September 2020, <http://w,ww.marxist.com/climate-change-in-india-no-solution-under-capitalism.htm>.

¹¹⁸ *Making Capitalism More Inclusive, Selected Speeches and Essays from Participants at the Conference on Inclusive Capitalism*, London, 27 May 2017, pdf; Josh Stott, *What is inclusive growth and why does it matter?*, 12th Jan, 017, <https://www.jrf.org.uk/blog/what-inclusive-growth-and-why-does-it-matter>; or (here the criticism, but without solutions, of) the entertaining motivational practices within the enterprise: Nicolas Bouzou, Julia de Funès, *La comédie (in)humaine*, Paris, Ed. de L'OBSERVATOIRE, 2018.

¹¹⁹ Rudy Telles Jr., “*Digital Matching Firms: A New Definition in the ‘Sharing Economy’ Space*”, June 3, 2016, Office of the Chief Economist, U.S. Department of Commerce, pdf.

¹²⁰ *The Age of Disorder – the new era for economics, politics and our way of life*, September 9, 2020, https://www.db.com/newsroom_news/2020/the-age-of-disorder-the-new-era-for-economics-politics-and-our-way-of-life-en-11670.htm.

¹²¹ James Lovelock, *The Revenge of Gaia: Earth’s Climate in Crisis and the Fate of Humanity*, Foreword by Sir Crispin Tickell, New York, Basic Books, 2006, pp. 7, 128, 149; also Richard St’ahel, “The Concept of Sustainable Retreat as an

solution; while the retreat as such is the relocation of people to areas which are safe from the standpoint of climate change, thus involving a different from the mainstream consideration of political and social relations. Other ones hope in an *allusive* way that even the capitalist system will improve, with science and technology, of course, but because people arrive to understand, due to the present pandemic, what is needed for our planet¹²². Thus, the despair is deep, but all of these thinkers, no matter how benevolent they are, do not attack the military system that is the main promoter of irrational waste of resources, of pollution and destruction of nature, nor do they explain the economic mechanism that will implement the new model of life¹²³.

The theory of catastrophes transmits, on one hand, an individualistic type of solution: the physical survival / the struggle for physical survival is of individuals resisting at the expense of other individuals, thus applying the old adage *homo homini lupus*¹²⁴, and at the same time their position is *passive*, even if they struggle: the catastrophe exists, so it is “natural”, “inevitable”, and what else could the individual strive for than to pleasantly survive (*carpe diem*)? On the other hand, the theory of catastrophes is used as a *fulfilling prophecy*: real catastrophes as the present pandemic should not be questioned and nor their causes and political treatment.

It was said that the present people are “untrained in tragedy”: not only because they were not prepared to confront one of its biological form as the pandemic, but rather because the meanings of the multiple tragedies of and in the world are hidden to them, covered – as we know – by the official manipulation of information and transmitted as fortuitous, rather individual, facts in front of which the reaction is, ultimately, fear. However, the reason to be of the *Greek tragedies* was, on the contrary, to rationally control irrational fears¹²⁵. Nowadays, because the human mind was formatted by the old and new “de-communication”¹²⁶, generating the strange unity of distrust in news¹²⁷ and an overwhelming informational bombardment, irrational fears are supported by the *concomitance* of people’s openness towards new technical apps, for instance, and, at the same time, their *inertia* to think social rules beyond the absurdity to accept the polarised control that led to the present world: *as if* they had more time and *as if* the world had time.

Much beyond these mainstream ideas as well as beyond the theory of logic, there is, however, the *imagination* of the non-existing worlds which do not disappear two days later. Why do

Answer to the Anthropocene Challenges”, in *EIBEA 2019, Encontro Iberoamericano de Estudos do Antropoceno. Atas*, Editores João Ribeiro Mendes, Bernhard Josef Sylla, Braga, CEPS, 2019, pp. 195-215.

¹²² Fritjof Capra and Hazel Henderson, *Pandemics – Lessons Looking Back From 2050*, <http://www.fritjofcapra.net/pandemics-lessons-looking-back-from-2050/>.

¹²³ Rather this is the usual mechanism of capitalism: in the UN “*Post 2015 Sustainable Development Agenda* containing 17 goals from ‘End Poverty in All Its Forms Everywhere’, through Goal 16, ‘Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels’ Goal 17’, *the Means of Implementation and the Global Partnership* contain ‘We note the critical importance of private finance and we call on businesses to apply their creativity and innovation to engage as partners in the development process’, ‘domestic public resources, private business, philanthropists and foundations, parliaments, local authorities and other stakeholders’, Carla Stea, *Schizophrenia at the UN: “The Post 2015 Sustainable Development Agenda”, No More Poverty, No More War...*, December 28, 2015, <http://www.globalresearch.ca/schizophrenia-at-the-un-the-post-2015-sustainable-development-agenda-no-more-poverty-no-more-war/5498174>; but 5% of the world’s military budget could completely fund the entire Post-2015 Sustainable Development goals.

¹²⁴ In the movies, videogames, and before, the books devoted to this topic, the hero(es) arrive to survive securing or constructing his/their individual niches on the expense of destruction and hecatombs of deaths of eventual enemies; why are those enemies, what do they aim is not questioned, apart from simplistic and out-of-date clichés.

¹²⁵ Yangos Andreadis, *Untrained in tragedy, III*, 12.09, 2020, <http://www.defenddemocracy.press/untrained-in-tragedy-iii/>.

¹²⁶ Fernand Vandamme, “Wisdom Lessons Based on the ‘Cytokine-Storm’ Metaphor”, *Wisdom*, 2(15), 2020, pp. 129-138, DOI: 10.24234/wisdom.v15i2.353.

¹²⁷ See also *Reuters Institute Digital News Report 2020*, pdf, p. 9.

they have this peculiarity? Because they are coherent in resulting from “universes which do fall apart” and because people have coped with them, although they feel unease knowing that they themselves were/are part of those universes of out-of-date facts which must perish. The universes which do not fall apart two days later are the result of humans who “can bounce back, absorb, and deal with the new”¹²⁸. Thus, *there are* ways out from the catastrophes.

References

1. 5G Corporate Grail. Microwave Radiation. Smart cities/dumb people?, November 09, 2018, <https://www.globalresearch.ca/5g-corporate-grail-microwave-radiation/5659341>.
2. 5G Health Risks; The War Between Technology and Human Beings, May 14, 2019, <https://www.gaia.com/article/5g-health-risks-the-war-between-technology-and-human-beings>.
3. 5G Is The “Stupidest Idea In The History of The World”- Washington State Biochemistry/Medical Science Prof, febr 19, 019, <https://www.collective-evolution.com/2019/02/19/5g-is-the-stupidest-idea-in-the-history-of-the-world-washington-state-biochemistrymedical-science-prof/>.
4. À Bure, l’agence des déchets nucléaires se paie des gendarmes, 5 juin 2020, [https://www.mediapart.fr/journal/france/050620/bure-l-agence-des-dechets-nucleaires-se-paie-des-gendarmes?utm_source=20200605&utm_medium=email&utm_campaign=HEBDO&utm_content=&utm_term=&xstor=EREC-83-\[HEBDO\]-20200605&M_BT=1882126269](https://www.mediapart.fr/journal/france/050620/bure-l-agence-des-dechets-nucleaires-se-paie-des-gendarmes?utm_source=20200605&utm_medium=email&utm_campaign=HEBDO&utm_content=&utm_term=&xstor=EREC-83-[HEBDO]-20200605&M_BT=1882126269).
5. Adieu l’école de la République, vive l’enseignement hybride !, Apprendre dans la start-up nation, 4 septembre 2020, http://nouspersonne.fr/doc/ENSEIGNEMENT_HYBRIDE.pdf.
6. Adults may be free to go missing, but that doesn’t mean they don’t need help, 30 Sep 2015, <https://www.theguardian.com/commentisfree/2015/sep/30/adults-missing-children-petra-pazsitka/>.
7. Alston, Philip. *The parlous state of poverty eradication. Report of the Special Rapporteur on extreme poverty and human rights*, 2 July 2020, Human Rights Council, pdf.
8. Altucher, James. NYC is dead forever. Here’s why, <https://nypost.com/2020/08/17/nyc-is-dead-forever-heres-why-james-altucher/>.
9. Yangos Andreadis, *Untrained in tragedy, III*, 12.09, 2020, <http://www.defenddemocracy.press/untrained-in-tragedy-iii/>.
10. A Third Of Fossil Fuel Assets May Soon Be Stranded, Feb 12, 2020, <https://oilprice.com/Energy/Crude-Oil/A-Third-Of-Fossil-Fuel-Assets-May-Soon-Be-Stranded.html>.
11. Auerbach, Alan J. et al., *How the Growing Gap in Life Expectancy May Affect Retirements Benefits and Efforts*, National Bureau of Economic Research, Working Paper 2339, 2017, pdf.
12. Barone, Guglielmo, Sauro Mocetti. What’s your (sur)name? Intergenerational mobility over six centuries, 17 May 2016, <https://voxeu.org/article/what-s-your-surname-intergenerational-mobility-over-six-centuries>
13. Bazac, Ana. “The machine motif in Descartes”, *Noesis*, XXXV, 2010, pp. 71-87.
14. Bazac, Ana. The intentionality of the consciousness: from phenomenology to neurosciences and back. The attitude of Evangelos Moutsopoulos towards the phenomenology of the consciousness (pp. 103-158) in (translation into Romanian by Ana Bazac) E. Moutsopoulos, *Conștiința intenționată*, Traducere din limba franceză, notă asupra traducerii, note și postfață despre The intentionality of the consciousness: from phenomenology to neurosciences and back. The attitude of Evangelos Moutsopoulos towards the phenomenology of the consciousness / Intenționalitatea conștiinței: de la fenomenologie la neuroștiințe și înapoi. Atitudinea lui Evangelos Moutsopoulos față de fenomenologia conștiinței, București, Omonia, 2017.
15. Bazac, Ana. « Au-delà de Rawls, même s’il soit point de départ: religion et raison publique en démocratie », *Analele Universității din Craiova – Seria Filosofie*, 41 (2), 2018, pp. 150-177.
16. Bazac, Ana. “What is natural and what is un-natural in cancer? ”, *Biocosmology – neo-Aristotelism*, Volume 8, Numbers 3&4, Summer/Autumn 2018, pp. 391-420.

¹²⁸ Philip K. Dick, *How to Build a Universe That Doesn’t Fall Apart Two Days Later*, 1978, https://urbigenous.net/library/how_to_build.html.

17. Bazac, Ana. "The Microenvironment and the Human Space", *Noema*, 2019, pp. 95-153.
18. Bazac, Ana. Notă despre eroism, 4 mai 2020, <http://www.criticatac.ro/nota-despre-eroism/> [Note about heroism].
19. Bazac, Ana. « Trop ou trop peu d'imagination ? Des neuro-sciences à la critique de l'unilatéralité de la conscience », in Jean-Yves Beziau et Daniel Schulthess (éd.), *L'Imagination. Actes du 37e Congrès de l'ASPLF* (Rio de Janeiro, 26- 31 mars 2018), Londres, College Publications, 2020, « Academia Brasileira de Filosofia », vol. 1, 639-656.
20. Bourdieu, Pierre, Patrick Champagne. « Les exclus de l'intérieur », *Actes de la recherche en sciences sociales*. Vol. 91-92, mars 1992. Politiques. pp. 71-75; doi : <https://doi.org/10.3406/arss.1992.3008>, https://www.persee.fr/doc/arss_0335-5322_1992_num_91_1_300.
21. Bouzou, Nicolas, Julia de Funès, *La comédie (in)humaine*, Paris, Ed. de L'OBSERVATOIRE, 2018.
22. Bradley, Arthur. *Originary Technicity: The Theory of Technology from Marx to Derrida*, Plagrave MacMillan, 2011.
23. Briguglio, Lino, Gordon Cordina, Nadia Farrugia, and Stephanie Vella. *Economic Vulnerability and Resilience: Concepts and Measurements*, May 2008, Research Paper No. 2008/55, United Nations University – World Institute for Development Economics Research.
24. Brose, Christian. *The Kill Chain: Defending America in the Future of High-Tech Warfare*, New York, Hachette Books, 2020.
25. Brulle, Robert J. "Institutionalizing delay: foundation funding and the creation of U.S. climate change counter-movement organizations", *Climate Change*, February 2014, Volume 122, Issue 4, pp 681–694.
26. Brussels Becomes First Major City to Halt 5G Due to Health Effects, April 04, 2019, <https://www.globalresearch.ca/brussels-first-major-city-halt-5g-due-health-effects/5673606>.
27. Calvelli, John. *The Future is an Image: Unsustainability, Plasticity and the Design of Time*, New York, Dresden, Atropos Press, 2015.
28. Calvo, Paco. "The Philosophy of Plant Neurobiology: A Manifesto", 2016, Minimal Intelligence Lab, University of Murcia.
29. Calvo, Paco and Karl Friston. "Predicting green: really radical (plant)predictive processing", *Journal of Royal Society. Interface*, 14, 2017, <http://dx.doi.org/10.1098/rsif.2017.0096>.
30. Calvo, Paco, Monica Gagliano, Gustavo M. Souza, Anthony Trewavas. "Plants are intelligent, here's how", *Annals of Botany*, October 2019, DOI: 10.1093/aob/mcz155/5575979.
31. Campbell, Liz A.D., Patrick J. Tkaczynski, Julia Lehman, Mohamed Mouna & Bonaventura Majolo. "Social thermoregulation as a potential mechanism linking sociality and fitness: Barbary macaques with more social partners form larger huddles", *Scientific Reports*, 8, 2018, DOI:10.1038/s41598-018-24373-4.
32. Capra, Fritjof. *The Science of Leonardo: Inside the Mind of the Great Genius of the Renaissance*, New York, Doubleday, 2007.
33. Capra, Fritjof and Hazel Henderson, *Pandemics – Lessons Looking Back From 2050*, <http://www.fritjofcapra.net/pandemics-lessons-looking-back-from-2050/>.
34. Case, Anne and Angus Deaton. "Rising morbidity and mortality in midlife among white non-Hispanic Americans in the 21st century", *PNAS*, December 8, 2015, vol. 112, no. 49, pp. 15078-15083
35. Chang, Ha-Joon. *23 Things They Don't Tell You About Capitalism*, Bloomsbury Press, New York, 2010.
36. Chapouthier, Georges. *The Mosaic Theory of Natural Complexity: A scientific and philosophical approach*. New edition [online]. La Plaine-Saint-Denis: Éditions des maisons des sciences de l'homme associées, 2018 (generated 12 April 2018). Available on the Internet: <<http://books.openedition.org/emsha/200>>.
37. Chossudovsky, Michel. "LancetGate: 'Scientific Corona Lies' and Big Pharma Corruption. Hydroxychloroquine versus Gilead's Remdesivir", 5 July 2020, https://www.globalresearch.ca/scientific-corona-lies-and-big-pharma-corruption-hydroxychloroquine-versus-gileads-remdesivir/5717718?utm_campaign=magnet&utm_source=article_page&utm_medium=related_articles.
38. Ciocan, Cristian. "Towards a Multi-modal Phenomenological Approach of Violence", *Human Studies* (2020) 43, pp.151–158, <https://doi.org/10.1007/s10746-020-09551-6>.

-
39. Clean energy progress after the Covid-19 crisis will need reliable supplies of critical minerals, 6 May 2020, <https://www.iea.org/articles/clean-energy-progress-after-the-covid-19-crisis-will-need-reliable-supplies-of-critical-minerals>.
 40. Climate policy endures rough EU budget summit, Jul 22, 2020, <https://www.euractiv.com/section/climate-environment/news/climate-policy-endures-rough-eu-budget-summit/>.
 41. *Closing the Opportunity Gap*, A Project of the Saguaro Seminar, 2016, pdf.
 42. Copoeru, Ion. “Event and Structure: A Phenomenological Approach of Irreducible Violence”, *Human Studies*, volume 43, 2020, pp. 257–268.
 43. Costa, Antoine. « Une planète en surchauffe plongée dans les eaux glacées du calcul égoïste », 29/12/2018, <http://www.defenddemocracy.press/une-planete-en-surchauffe-plongee-dans-les-eaux-glacees-du-calcul-egoiste/>.
 44. COVID-19 ups pressure on world resilience as global insurance protection gap reaches new high, Swiss Re Institute indices show, 26 Aug 2020, Zurich, <https://www.swissre.com/media/news-releases/nr-20200826-resilience-index-2020.html>.
 45. Curie, Pierre. *Radioactive substances, especially radium*, Nobel Lecture, June 6, 1905.
 46. Dawson, Ashley. *Extinction: A Radical History*, New York, O/R Books, 2016.
 47. Derrida, Jacques. *Apprendre à vivre enfin*, Avec une préface de Jean Birnbaum, Paris, Galilée, 2005.
 48. Dick, Philip K. *How to Build a Universe That Doesn't Fall Apart Two Days Later*, 1978, https://urbigenous.net/library/how_to_build.html.
 49. Don't be Fooled: New Mexico Proposal Would Open Door for Toxic Frack Waste Dumping, 8 July 2020, <https://wildearthguardians.org/brave-new-wild/show-on-home/dont-be-fooled-new-mexico-proposal-would-open-door-for-toxic-frack-waste-dumping/>.
 50. Bernard Duterme, Les cinq dilemmes de la crise écologique, <https://www.cetri.be/Les-cinq-dilemmes-de-la-crise?lang=fr>.
 51. Elizabeth, Erin. “Unexplained Mass Bird Deaths During Dutch 5G Experiment”, November 6, 2018, *Principia Scientific International*, <https://principia-scientific.org/unexplained-mass-bird-deaths-during-dutch-5g-experiment/>.
 52. Erwin, D. H. *Extinction: How Life on Earth Nearly Ended 250 Million Years Ago*, Princeton Univ. Press, 2006.
 53. EU 5G Appeal – Scientists warn of potential serious health effects of 5G, 30/03/2020, <http://www.defenddemocracy.press/eu-5g-appeal-scientists-warn-of-potential-serious-health-effects-of-5g/>.
 54. Eurostat. Handbook on the compilation of statistics on illegal economic activities in national accounts and balance of payments, 2018 edition, <https://ec.europa.eu/eurostat/documents/3859598/8714610/KS-05-17-202-EN-N.pdf/eaf638df-17dc-47a1-9ab7-fe68476100ec>.
 55. Exporting Toxic Chemical Waste to Poor Countries Must End, Says UN, July 16, 2020, <https://www.globalresearch.ca/exporting-toxic-chemical-waste-poor-countries-must-end-says-un/5718654>.
 56. Fantacone, Mary L. et al. “The Effect of a Multivitamin and Mineral Supplement on Immune Function in Healthy Older Adults: A Double-Blind, Randomized, Controlled Trial”, *Nutrients*, 12 (8), 2020, 2447 DOI: 10.3390/nu12082447, pp. 1-15.
 57. Fares, Robert. Landmark 100 Percent Renewable Energy Study Flawed, Say 21 Leading Experts, June 23, 2017, <https://blogs.scientificamerican.com/plugged-in/landmark-100-percent-renewable-energy-study-flawed-say-21-leading-experts/>.
 58. Fawthrop, Tom. Madness on the Mekong: How Dams are Killing the Largest Inland Fisheries in the World, 3 August 2016, http://www.theecologist.org/News/news_analysis/2987981/madness_on_the_mekong_how_dams_are_killing_the_largest_inland_fisheries_in_the_world.html.
 59. *Financial Health of Young America: Measuring Generational Declines between Baby Boomers & Millennials*, 2017, pdf.
 60. Firstenberg, Arthur. The Largest Biological Experiment Ever, 1 Jan 2006, https://www.cellphonetaskforce.org/wp-content/uploads/2011/06/largest_exp.pdf.
-

61. Firstenberg, Arthur. *The Invisible Rainbow: A History of Electricity and Life*, Santa Fe, NM: AGB Press, 2017.
62. Firstenberg, Arthur. Planetary Emergency, May 14, 2018, <https://www.cellphonetaskforce.org/planetary-emergency/>.
63. Fitz, Don. Dams, Rivers and Lakes: “Dammed” Good Questions About “The Green New Deal”. Ten Problems, November 04, 2019, <https://www.globalresearch.ca/dammed-good-questions-about-green-new-deal/5693857>.
64. Frazier, P. Adam, Lorenzo Jamone, Kaspar Althoefer, and Paco Calvo. “Plant Bioinspired Ecological Robotics”, *Frontiers in Robotics and AI*, Volume 7, July 2020, doi: 10.3389/frobt.2020.00079.
65. *Gas Companies Are Abandoning Their Wells, Leaving Them to Leak Methane Forever*, September 17, 2020, <https://www.bloomberg.com/news/features/2020-09-17/abandoned-gas-wells-are-left-to-spew-methane-for-eternity?srnd=premium>.
66. Ghani, Arsalan. Climate change in India – no solution under capitalism, 10 September 2020, <http://www.marxist.com/climate-change-in-india-no-solution-under-capitalism.htm>.
67. Gheverghese Joseph, George. “The Enormity of Zero”, *Revista Brasileira de História da Matemática* - Vol. 2 no 4 (outubro/2002- março/2003) - pág.155 – 167, Publicação Oficial da Sociedade Brasileira de História da Matemática.
68. ‘Green’ billionaires behind professional activist network that led suppression of ‘Planet of the Humans’ documentary, Sept 7, 2020, <https://thegrayzone.com/2020/09/07/green-billionaires-planet-of-the-humans/>.
69. Growth in Renewables has Stalled. Investment is Falling. But Why?, 30/05/2019, <http://www.defenddemocracy.press/growth-in-renewables-has-stalled-investment-is-falling-but-why/>.
70. Harris, William. The Diary of a Retired College Professor, <http://wayback.archive-it.org/6670/20161201174643/http://community.middlebury.edu/~harris/Humanities/MyToilet.html>.
71. Hays, Jake, Seth B.B. Shonkoff. “Toward an Understanding of the Environmental and Public Health Impacts of Unconventional Natural Gas Development: A Categorical Assessment of the Peer-Reviewed Scientific Literature, 2009-2015”, *PLoS ONE*, 11(4): e0154164. doi:10.1371/journal.
72. Heath, Garvin A. et al. “Research and development priorities for silicon photovoltaic module recycling to support a circular economy”, *Nature Energy*, Published Online 13 July 2020, <https://doi.org/10.1038/s41560-020-0645>.
73. https://ec.europa.eu/environment/waste/weee/index_en.htm.
74. Henkes, Lisa. Radio Frequency Radiation (EMF) Threatens Plant and Animal Species with Extinction, June 11, 2019, <https://www.globalresearch.ca/unspoken-truth-emfs-threaten-1-million-species-extinction/5680338>.
75. *High-frequency Active Auroral Research Program*, https://en.wikipedia.org/wiki/High-frequency_Active_Auroral_Research_Program.
76. Hock, Dee W. *Birth of the Chaordic Age*, Berrett-Koehler Publishers, 2000.
77. Holton Price, Michael and James Holland Jones. “Fitness-maximizers employ pessimistic probability weighting for decisions under risk”, *Evolutionary Human Sciences* (2020), 2, e28, pp. 1016, doi:10.1017/ehs.2020.28.
78. Hopkins, Andrew. *Organising for Safety. How structure creates culture*, Sydney, Wolters Kluwer, 2019.
79. Inexperienced workers make for a difficult harvest, https://www.economist.com/britain/2020/08/13/inexperienced-workers-make-for-a-difficult-harvest?utm_source=headtopics&utm_medium=news&utm_campaign=2020-08-17.
80. Hudson, Kate. Funding Hydropower Projects will Not Fight Climate Change, August 10, 2020, <https://waterkeeper.org/news/funding-hydropower-projects-will-not-fight-climate-change/>.
81. Inglehart, Ronald F. “Giving Up on God: The Global Decline of Religion”, September/October 2020, https://www.foreignaffairs.com/articles/world/2020-08-11/religion-giving-god?utm_medium=newsletters&utm_source=twofa&utm_campaign=Giving%20Up%20on%20God&utm_content=20200821&utm_term=FA%20This%20Week%20-%2020112017.
82. Institute for Policy Studies, *The Human Trafficking Of Domestic Workers In The United States: Findings from the Beyond Survival Campaign*, 2017, pdf.

-
83. Institute for Policy Studies, Notes from the Storm: Black Immigrant Domestic Workers in the Time of Covid-19, Survey May 19-June 6, 2020, pdf.
 84. Jancovici, Jean-Marc. Is “sustainable development” of any use to save the world?, <https://jancovici.com/en/energy-transition/societal-choices/is-sustainable-development-of-any-use-to-save-the-world/>.
 85. Keen, Steve. Nobel prize-winning economics of climate change is misleading and dangerous – here’s why, September 9, 2020, <https://theconversation.com/nobel-prize-winning-economics-of-climate-change-is-misleading-and-dangerous-heres-why-145567>.
 86. Kelloway, Claire. “Why Are Farmers Destroying Food While Grocery Stores Are Empty?,” *Washington Monthly*, April 28, 2020.
 87. Kojève, Alexandre. *Introduction à la lecture de Hegel, Leçons sur la Phénoménologie de l’esprit professées de 1933 à 1939 à l’Ecole des Hautes-Etudes*, réunies et publiées par Raymond Queneau, Paris, Gallimard, 1947.
 88. Kováč, Ladislav. “Life, chemistry and cognition: Conceiving life as knowledge embodied in sentient chemical systems might provide new insights into the nature of cognition”, *EMBO Reports*, 2006, June, 7 (6), pp. 562-566.
 89. Kováč, Ladislav. “Homo artefactus”, *EMBO Reports*, 15(5), May 2014, DOI: 10.1002/embr.201438750.
 90. Lankester, Ray. *Science from an Easy Chair*, London, Methuen & Co., 1913.
 91. Lawson, Brian. *How Designers Think: The Design Process Demystified* (1980), Fourth Edition, Amsterdam etc., Architectural Press – Elsevier, 2005.
 92. Leclère, David et al., “Bending the curve of terrestrial biodiversity needs an integrated strategy”, *Nature*, September 2020.
 93. Linden, Eugene. The economics Nobel went to a guy who enabled climate change denial and delay, Oct 25, 2018, <https://www.latimes.com/opinion/op-ed/la-oe-linden-nobel-economics-mistake-20181025-story.html>.
 94. Lovelock, James. Nuclear power is the only green solution, 24 May 2004, *Independent OnLine Edition*, <https://web.archive.org/web/20060422055649/http://comment.independent.co.uk/commentators/article61727.ece>.
 95. Lovelock, James. *The Revenge of Gaia: Earth’s Climate in Crisis and the Fate of Humanity*, Foreword by Sir Crispin Tickell, New York, Basic Books, 2006.
 96. Making Capitalism More Inclusive, Selected Speeches and Essays from Participants at the Conference on Inclusive Capitalism, London, 27 May 2017, pdf.
 97. Malte Jansen et al., “Offshore wind competitiveness in mature markets without subsidy”, *Nature Energy*, Published 27 July 2020.
 98. Maslow, A. H. “A Theory of Human Motivation, *Psychological Review*, 50, 1943, pp. 370-396.
 99. Mason, Samantha. Time to end the market farce of energy transition: we need a pro-public democratically controlled energy system, 11 Feb 20, <https://www.transform-network.net/en/blog/article/time-to-end-the-market-farce-of-energy-transition-we-need-a-pro-public-democratically-controlled-en/>.
 100. Mathematics predicts a sixth mass extinction, 22/01/2018, <http://www.defenddemocracy.press/mathematics-predicts-a-sixth-mass-extinction/>.
 101. McPherson, Guy. Extinction Foretold, Extinction Ignored, last updated 11 July 2020, <https://translate.google.com/#view=home&op=translate&sl=ro&tl=en&text=mondial>.
 102. Milanovic, Branko. The World Is Becoming More Equal, August 28, 2020, https://www.foreignaffairs.com/articles/world/2020-08-28/world-economic-inequality?utm_medium=newsletters&utm_source=twofa&utm_campaign=The%20World%20Is%20Becoming%20More%20Equal&utm_content=20200904&utm_term=FA%20This%20Week%20-%20112017.
 103. Mills, John Stuart. *The Sociological Imagination*, New York, Oxford Press, 1959.
 104. Moore, Jason. “Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism”, Sociology Faculty Scholarship, 2016, pdf.
-

105. Mongey, Simon and Alex Weinberg. Characteristics of Workers in Low Work-From-Home and High Personal-Proximity Occupations. March 2020, Working paper, BF Institute for Economics at UChicago, pdf.
106. Nader, Ralph. Needed: Indicators for Measuring Injustice and Societal Decay, 15 August 2020, <https://www.commondreams.org/views/2020/08/15/needed-indicators-measuring-injustice-and-societal-decay>.
107. *National Academies of Sciences, Engineering, and Medicine 2020. A Quadrennial Review of the National Nanotechnology Initiative: Nanoscience, Applications, and Commercialization*. Washington, DC: The National Academies Press, <https://doi.org/10.17226/25729>.
108. 'Nature Is Unraveling': New WWF Report Reveals 'Alarming' 68% Plummet in Wildlife Populations Worldwide Since 1970, September 10, 2020, <https://www.commondreams.org/news/2020/09/10/nature-unraveling-new-wwf-report-reveals-alarming-68-plummet-wildlife-populations>; the Report at <https://livingplanet.panda.org/en-us/>.
109. Nelson, Joyce. Canada's SNC-Lavalin Affair: The Site C Dam Project and Bulk Water Export, November 03, 2019, <https://www.globalresearch.ca/snc-lavalin-site-c-bulk-water-export/5671247>.
110. *Nouvelle théorie des plaisirs*, par Mr. Sulzer de l'Académie Royale des Sciences et des Belles-Lettres de Berlin ; avec des Réflexions sur l'Origine du Plaisir, par Mr. Kaestner de la même Académie, M.DCC. LXVII.
111. Observateur continental, « Les éoliennes en Allemagne: quand le rêve écologique devient un cauchemar », 2020, <http://www.observateurcontinental.fr/?module=articles&action=view&id=1393>.
112. Pearce, Fred. A Major Oil Pipeline Project Strikes Deep at the Heart of Africa, May 21, 2020, <https://e360.yale.edu/features/a-major-oil-pipeline-project-strikes-deep-at-the-heart-of-africa>.
113. Petrovic, Dusan et al., "The contribution of sleep to social inequalities in cardiovascular disorders: a multi-cohort study", *Cardiovascular Research*, cvz267, <https://doi.org/10.1093/cvr/cvz267>, published: 22 November 2019, pp. 1-11.
114. Pigliucci, Massimo. "Science and fundamentalism", *EMBO Reports*, VOL 6 | NO 12 | 2005, pp. 1106-1109.
115. Piketty, Thomas. *Le capital au XXIe siècle*, Paris, Seuil, 2013.
116. Porter, Eduardo. The Service Economy Meltdown, Sept. 4, 2020, <https://www.nytimes.com/2020/09/04/business/economy/service-economy-workers.html>.
117. Price, Carter C. and Kathryn A. Edwards. *Trends in Income From 1975 to 2018*, Rand Education and Labor, September 2020, pdf.
118. *Reuters Institute Digital News Report 2020*, pdf.
119. Ripple, William J., Christopher Wolf, Thomas M Newsome, Phoebe Barnard, William R Moomaw. (November 5, 2019), "World Scientists' Warning of a Climate Emergency", *BioScience*, Volume 70, Issue 1, January 2020, pp. 8–12.
120. Rifkin, Jeremy. *The Third Industrial Revolution: How Lateral Power Is Transforming Energy, the Economy, and the World*, Palgrave Macmillan, 2011.
121. Robbins, Paul, John Hintz and Sarah A. Moore. *Environment and Society. A Critical Introduction*, Second Edition, Willey Blackwell, 2014.
122. Roberts, Michael. The Wealth of Nations, <https://thenextrecession.wordpress.com/2018/02/09/the-wealth-of-nations/>.
123. Roberts, Michael. Wealth or income?, <https://thenextrecession.wordpress.com/2020/07/15/wealth-or-income/>.
124. Rothman, Daniel H. "Thresholds of catastrophe in the Earth system", *Science Advances*, 20 Sep 2017, Vol. 3, no. 9, e1700906, DOI: 10.1126/sciadv.1700906.
125. Rowe, Thomas. "Risk and the Unfairness of Some Being Better Off at the Expense of Others", *Journal of Ethics and Social Philosophy*, <https://doi.org/10.26556/jesp.v16i1.621> Vol. 16, No. 1, September 2019, pp. 44-66.
126. Sanatoria, crisi emersione lavoro domestico, 21 Luglio 2020, <http://www.studiolegaledl.it/2020/07/21/sanatoria-crisi-emersione-lavoro-domestico/>.
127. Schwab, Klaus. *The Fourth Industrial Revolution*, WEF, Genève, 2016.

-
128. Scientific Research on 5G, 4G Small Cells, Wireless Radiation and Health, <https://ehtrust.org/scientific-research-on-5g-and-health>.
129. Scott, Martin. Government has no solution to Australia's water crisis, 16 October 2019, <https://www.wsws.org/en/articles/2019/10/16/wate-o16.html>.
130. Séminaire Pharmakon 2019/2020 – Bernard Stiegler, <https://recherchecontributive.org/seminaire-pharmakon-2019-2020-bernard-stiegler/>.
131. Solar Foods receives world's most prestigious design award, 06/09/2019, https://solarfoods.fi/our-news/solar-foods-receives-worlds-most-prestigious-design-award/?utm_source=hs_email&utm_medium=email&utm_content=76470704&_hsenc=p2ANqtz-9Ng8d-kTtjDUZPbtvnbMhMVJ9d8FgLqEqZleIOuGnGCtkfh4s56wIUy1ft8uJ-aKiiA7fRINfyFecmgd6tEm9ClzyqbA&_hsmi=76470704.
132. Solar Panels Are Starting to Die, Leaving Behind Toxic Trash, 08.22.2020, <https://www.wired.com/story/solar-panels-are-starting-to-die-leaving-behind-toxic-trash/>.
133. St'ahel, Richard. "The Concept of Sustainable Retreat as an Answer to the Anthropocene Challenges", in *EIBEA 2019, Encontro Iberoamericano de Estudos do Antropoceno. Atas*, Editores João Ribeiro Mendes, Bernhard Josef Sylla, Braga, CEPS, 2019, pp. 195-215.
134. Stea, Carla. Schizophrenia at the UN: "The Post 2015 Sustainable Development Agenda", No More Poverty, No More War..., December 28, 2015, <http://www.globalresearch.ca/schizophrenia-at-the-un-the-post-2015-sustainable-development-agenda-no-more-poverty-no-more-war/5498174>
135. Steffen, Will et al., "Trajectories of the Earth System in the Anthropocene", *PNAS*, August 14, 2018, 115 (33) pp. 8252-8259; published ahead of print August 6, 2018 <https://doi.org/10.1073/pnas.1810141115>.
136. Stengers, Isabelle. « Pragmatiques et forces sociales », *Multitude*, 23, Hiver 2005/4, pp. 115-124, <https://doi.org/10.3917/mult.023.0115>.
137. Stengers, Isabelle, William James, *Une autre science est possible ! Manifeste pour un ralentissement des sciences* (suivi de *Le poulpe du doctorat*) (2013), Paris, La Découverte, coll. « Sciences humaines et sociales », 2017.
138. Stiegler, Bernard. *The Neganthropocene*, Edited, translated and with an introduction by Daniel Ross, London, Open Humanities Press, 2018.
139. Stott, Josh. What is inclusive growth and why does it matter?, 12th Jan, 017, <https://www.jrf.org.uk/blog/what-inclusive-growth-and-why-does-it-matter>
140. Sutton, Peter and Christopher Anderson (Eds.) with the contributions of Philip Jones, Françoise Dussart, Stephen Hemming. *Dreamings: The Art of Aboriginal Australia*, Viking, 1989.
141. Taylor, Peter James, Geoff O'Brien, Phil O'Keefe. "Anthropogenic Climate Change is Urban Not Modern: Towards an Alternate Critical Urban Geography", *ACME: An International Journal for Critical Geographies*, Vol. 16, No. 4, 2017, pp. 781-803.
142. Telles, Rudy Jr., "Digital Matching Firms: A New Definition in the 'Sharing Economy' Space", June 3, 2016, Office of the Chief Economist, U.S. Department of Commerce, pdf.
143. TenHouten, Warren D. "From Ressentiment to Resentment as a Tertiary Emotion", *Review of European Studies*, Vol. 10, No. 4; 2018, pp. 49-64.
144. Towards an integral approach to sustainable agriculture and healthy nutrition : vision of the Scientific Council for Integral Sustainable Agriculture and Nutrition, <https://research.wur.nl/en/publications/towards-an-integral-approach-to-sustainable-agriculture-and-health/fingerprints/>.
145. The Age of Disorder – the new era for economics, politics and our way of life, September 9, 2020, https://www.db.com/newsroom_news/2020/the-age-of-disorder-the-new-era-for-economics-politics-and-our-way-of-life-en-11670.htm.
146. The companies that help people vanish, <https://www.bbc.com/worklife/article/20200903-the-companies-that-help-people-vanish>.
147. *The Distressed Communities Index 2017*, pdf.
148. *The Human Capital Index 2020 Update: Human Capital in the Time of Covid-19*, Washington, International Bank for Reconstruction and Development / The World Bank, 2020, pdf.
-

149. Turkey Cutting Euphrates River Flow to Syria: Crime against Humanity, Violation of UN Water Convention, February 26, 2017, http://www.globalresearch.ca/turkey-cutting-euphrates-river-flow-to-syria-crime-against-humanity-violation-of-un-water-convention/5576905?utm_campaign=magnet&utm_source=article_page&utm_medium=related_articles
150. *United in Science 2020: A multi-organization high-level compilation of the latest climate science information*, pdf, public.wmo.int/en/resources/united_in_science.
151. US Media Can't Think How to Fight Fires Without \$1-an-Hour Prison Labor, August 25, 2020, <https://fair.org/home/us-media-cant-think-how-to-fight-fires-without-1-an-hour-prison-labor/#https://fair.org/home/us-media-cant-think-how-to-fight-fires-without-1-an-hour-prison-labor/>.
152. US Sanctions Russian Defence Ministry Research Institute That Worked on COVID-19 Vaccine, 27/08/2020, <http://www.defenddemocracy.press/us-sanctions-russian-defence-ministry-research-institute-that-worked-on-covid-19-vaccine/>.
153. We have entered the 'end game' for oil — with “permanent demand destruction, July 30, 2020, <http://priceofoil.org/2020/07/30/we-have-entered-the-end-game-for-oil-with-permanent-demand-destruction/>.
154. What is Modern Slavery?, <https://www.state.gov/what-is-modern-slavery/>.
155. When adults walk away, it's wrenching but not illegal, March 18, 2012, <https://www.startribune.com/when-adults-walk-away-it-s-wrenching-but-not-illegal/143269506/>.
156. Winner, Langdon. *The Whale and the Reactor: A Search for Limits in an Age of High Technology*, Chicago, University of Chicago Press, 1986.
157. Woodworth, Elizabeth. Remdesivir for Covid-19: \$1.6 Billion for a “Modestly Beneficial” Drug?, August 01, 2020, <https://www.globalresearch.ca/remdesivir-covid-19-1-6-billion-modestly-beneficial-drug/5717690>.