A text dump on Karacam

Contents

Essays

Note about translations and articles published on Karaçam blog

Date: Sunday, July 17, 2022
Source: <web.archive.org/web/20240527123415/https://vahsikaracam.blogspot.com/2022/07/karacam-blogunda-yaynlanan-ceviriler-ve.html>

We noticed that some of the articles and translations published on the Karaçam blog were published on various Anarchist sites. The blog owner has nothing to do with Anarchism, the Anarchist sites and their owners/administrators who publish the content of the Karaçam blog *without permission , and does not share the social ideals and values of Anarchism.*

Larch blog takes wild Nature as its core value. Wilderness is everything (including human nature) that is not artificial (not man-made) and has its own autonomous processes without being under the control of complex human societies. In order to protect wild Nature, the Black Pine blog opposes technological development and the techno-industrial system (social system with the most advanced technological possibilities) that poses the greatest danger against Wild Nature.

Saturday, May 6, 2023

A Warning about The Ted K Archive

It has recently come to our attention that a pro-tech leftist that goes by the name Theo Slade has created a website titled "*The Ted K Archive*" in order to upload all of Kaczynski's writings online against Kaczynski's wishes and in violation of the author's copyrights. Slade also intends for this site to serve as a platform to critique Kaczynski's ideas and turn individuals away from the cause against the techno-industrial system for the sake of wild Nature. While Slade and his collaborators have gone around to various online communities and individuals that have some affinity with Kaczynski's ideas in an attempt to solicit help under the guise of creating a project that could be beneficial to the incipient movement, make no mistake, their actions are duplicitous and the overall group behind the website only attempts to nullify the nascent movement against the techno-industrial system for the sake of wild Nature.

In the "About This Project" section of their website (*https://www.thetedkarchive.com/special/about-this-project*) it is made clear that this site is nothing more than a sad attempt to harm the cause against the techno-industrial system for the sake of wild Nature:

"... we're hoping the website can work to draw people in with similar politics to [Kaczynski] and similar mental health issues frankly. Then for the cold hard reality of the primary source reading material, the epic-ness of the suggested reading material and the inviting discussion spaces connected to the website, to all have a deprogramming effect and be a mental health support."

And as for Slade's collaborators, it seems that the majority are pro-tech as well: "We, the librarians who bought the website domain, are pro-tech anarchists, but we just find his life story and impact really interesting."

While their critiques of Kaczynski's writings are so silly that they are not even worth countering (as any reasonably rational and intelligent person would not be swayed by the "arguments" put forth in them), the attempt by these leftists to have control over Kaczynski's writings (again, expressly against his wishes) is concerning. Those that want to foster the healthy growth of the movement against the techno-industrial system for the sake of wild Nature should denounce and disavow the project, and take steps to avoid any collaboration with it.

Signed,
Fitch&Madison
Último Reducto

Naturaleza Indómita
Ediciones Isumatag
Aram (⊠⊠)
Karaçam

The Importance of Wild Nature[1]

A.Q.

1. What is wild Nature?

Wild Nature is everything that is not artificial and whose functioning is autonomous. The wild is the part of Nature that is untamed, that is not subject to control and management by human beings (or by technological systems manufactured by them). The influence of human beings in great part of the planet's ecosystems has been intense in recent centuries (or even millennia) and this is especially noticeable in the Iberian Peninsula, where the wild does not have a presence either in the environment or in the culture even remotely similar to that of other countries (especially those of Germanic and Nordic descent, where the term "wilderness" comes from, which I will talk about later).

The notion of wild Nature and its value is little known in Spain. These questions have been theoretically very little developed and have hardly had any presence and influence in the culture and the population in general, not even among those who say they love Nature and want to conserve it. Yet wild Nature is still there, everywhere, more or less dominated depending on the place and, for the moment, still latent, being able to resurface wherever it is free from the interference of human societies.

One of the consequences of the scarce presence of the wild in Spanish culture and environment, is what is known as "the Shifting Baseline Syndrome", applied at the ecological level (Palau, 2019): as ecosystems lose their wildness (the autonomy of natural processes), people tend to take as references of healthy and well-preserved ecosystems, environments that are really nothing but, at best, degraded states of what once there was. This has influenced the way many people within environmentalism tend to pose the ecological ideal in Spain (a country intensely humanized for many centuries): a rural or urban "green" world, with a "nature" that is mostly domesticated and largely dependent on human beings and their culture. If all that a person gets to know in his surroundings are streets of cities and towns, gardens, agricultural or livestock land, tree plantations and secondary forests, the most normal thing is that this person ends

[1] Translation from the Spanish of the article "La importancia de la Naturaleza salvaje", published on *Naturaleza Indomita* (https://www.naturalezaindomita.com/textos/naturaleza-salvaje-y-teora-ecocntrica/la- importancia-de-la-naturaleza-salvaje). Copyright © 2020 by A.Q. *Translator's note.*

up thinking that this is true Nature, since the environment does not have territories that serve as a reference of what is a truly natural, healthy and well preserved place. Some mental effort is necessary (apart from some level of ecological knowledge) to realize that real (i.e., wild) Nature is something else: what was there before all that domestication and degradation. This "syndrome" favors taking as a reference of what are healthy and well-preserved ecosystems, environments increasingly degraded.[2][3]

2. What is a wilderness area?

This English term, which lacks a similar term in Spanish, refers to the little or non-humanized areas where Nature follows its own dynamics. Depending on the context it can be translated specifically as "wild/wild lands", "wild/wild ecosystems", "wild/wild areas" or, more generally, as "wild Nature". There are different definitions depending on who gives them and where they appear (European Commission, 2013. Pages 13–14), but at least they all agree on this: it is about areas where the footprint of the human being is non-existent or difficult to be perceived, without roads, gravel-roads or tracks, no permanent human settlements or other artificial infrastructures, or productive-economic uses (agriculture, livestock, forestry, mining, etc.). In other words, they are territories where natural dynamics are paramount. This may seem like something very abstract, but I'm sure any Nature lover has at least an intuitive notion of what a wild environment is like.

The first law for the protection of wild ecosystems was the Wilderness Act of 1964, in USA, in which you can read:

> A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain.[4]

After this, the IUCN (International Union for Conservation of Nature) created some categories to try to differentiate the several types of protected spaces. One of those categories mentioned by the IUCN is that of "Wilderness Area", category Ib (Dudley, 2008. pp. 17–19), which agrees mostly with the American concept of "wilderness". In addition, this organization mentions the possibility that these types of protected areas are in turn inserted into other broader protected areas under another category and denomination, such as National or Natural Parks (Dudley, 2008. p. 20).

More recently, the European Commission defined a wilderness area like this:

[2] The Shifting Ecological Baseline Syndrome has also been called by others "landscape amnesia" (Wolke, 2014).

[3] To deepen into the concept of Wild Nature and its value, the following works can be read: Foreman, 2008; Keim, 2014; Nash, 2014 and Wolke, 2014.

[4] https://en.wikipedia.org/wiki/Wildemess Act.

*A **wilderness** is an area governed by natural processes. It is composed of native habitats and species, and large enough for the effective ecological functioning of natural processes. It is unmodified or only slightly modified and without intrusive or extractive human activity, settlements, infrastructure or visual disturbance.*

The definition includes four qualities of wilderness: a) naturalness, b) undisturbedness, c) undevelopedness and d) scale; an overarching and changing variable which by definition is central for the wilderness concept. (European Commission, 2013)

Furthermore, the fact that an ecosystem has suffered various artificial disturbances during a time, even over centuries, does not mean that the wild has completely died in it and, therefore, it does not mean that he cannot fully or partially regain its wildness.

The experienced American conservationist Dave Foreman put it like this:

[...] Ecosystems often can recover from human-caused impacts over periods of time, depending on the level of impact. This resilience should never be used as justification for further intrusions into wilderness, but it does provide a valid rationale for the concept of wilderness recovery and rewilding. (Foreman, 2014)

From all this it could be deduced that, for an area to be considered wilderness, first it must be legally declared so. However, many wilderness areas are not protected by law, and wildness (and the capacity for regeneration thereof) exists in different degree anywhere on the planet (even in environments as artificial as a city). So, protected wild areas only represent a portion of wild Nature.

3. Why is wild Nature important?

Some people may wonder why wild Nature is important. Some reasons are:[5]

a) Wild nature and wild character have intrinsic value.

b) It is an essential source of ecosystem services (not only beneficial or necessary for human beings, but for living beings in general).

c) It is a source of non-artificial biodiversity. Although the diversity of species and wildness do not always have a directly proportional relationship, the number of species dependent on wild ecosystems is innumerable.

d) Wild Nature is home to most non-domestic living things. Many species cannot (or barely) live in artificial environments with constant human presence.

e) Wild Nature is also the necessary medium for evolution to follow its course autonomously, and wild ecosystems are the genetic reservoir of the wild life forms.

f) If the wild disappears, there will no longer be references that indicate that there can be other forms of life, environments, influences, etc. different from those offered by civilization and humanistic thought (see what has been said about shifting ecological baselines).

[5] Apart from what is exposed here, to go deeper into the importance of preserving areas wild, can be read: Foreman, 1994 and Buckley, 2010.

g) It is necessary to recognize, despite the increasing presence and domination of the human societies on the environment, that wild Nature is still there and it does not need us. Similarly, having influence is not the same as being in command.

h) It is necessary to face conservation from an ecocentric point of view (wild Nature comes first) and not anthropocentric (humans, their culture and their things come first or even they are the only thing). Without this perspective, Nature conservation will be weighed down from the starts.

i) The complexity of wild Nature has hitherto exceeded, and will always exceed human prediction models. To pretend that humans are capable of managing ecosystems (for their own good) more successfully than autonomous natural processes, is a gesture of arrogance very typical of our species, which does not correspond to reality.

j) It is also our evolutionary reference environment. It's the place where our species evolved and to which our physical and psychological capacities are adapted. Proof of this is that, for many (if not for most of the) people, Nature inspires a reverence and passion that no artificial environment generates.

k) There are also reasons of a scientific nature. Conservation biologists have shown that large predators are fundamental pieces for the conservation of ecosystems (in terms of their structure, functioning, resilience and diversity).[6] These predators need large, interconnected range areas, but also core areas where they can develop certain activities that are necessary for their survival with little or no human interference (Soule and Noss, 1998).[7]

l) Another scientific reason is that wilderness areas serve as a reference to know what an area was like before it suffered artificial disturbances, and thus they make possible to correctly assess the state of conservation of an ecosystem as well as the effectiveness of the restoration work (see what has been said above about shifting baselines).

[6] An example of this can be seen in this article on the effects of the reintroduction of the Iberian lynx in some ecosystems: Jimenez *et al.*, 2019.

[7] The current situation of large predators in the Iberian Peninsula apparently contradicts the claim that large predators need places free from human interference to carry out some of their activities. Sometimes species adapt to living in unnatural conditions, but this always comes at a price, and it is only true to a certain extent. In the case of Iberian bears, they live in the most remote (less humanized) places that Spanish geography allows them to (that's why they are in the Cantabrian Mountain Range and not in the Castilian Plateau, for example). If they can choose, they prefer to stay away from humans. This is a first proof that the affirmation of Soule and Noss is not misguided. Also, there are differences in life expectancy and needs of range areas with respect to other predators of the same species that live in other less humanized places. Spanish bears need travel greater distances to feed themselves than bears in other less humanized parts of Europe. And Iberian wolves have a low life expectancy in relation to other populations of wolves from less humanized areas (Barrientos's study that I put as a referenceshows that, at least in some areas of Spain, wolves die mainly from anthropogenic causes). Therefore, the Iberian large predators pay a higher price the more humanized is the environment in which they have to manage to live. And when that transformation of the environment exceeds certain limits, these predators have serious problems thrive.

4. How are wilderness areas different from Spanish Protected Natural Spaces (PNSs)[8]?

It is also likely that many people do not understand the difference between a wilderness area and the current protected natural spaces (national parks, natural parks, nature reserves, etc.) in our country. I will try to summarize here the most important differences that I see between them:

a) Spanish PNSs are created, in principle, to combine conservation of certain characteristics of the natural environment with human activities and culture. However, since such an arrangement is actually impossible (preserving and developing are antonyms), in practice the PNSs are usually managed to primarily promote the socio-economic development of the "protected" area.[9] In this way, in most cases, the conservation of Nature remains in the background (or compromise solutions are sought in which, in the long run, wild Nature loses out).[10] Socio-economic development can be compatible with a Nature that is domesticated and controlled by humans, but not with the wildness of ecosystems. In order one thing (human societies) to grow and prosper the other (Wild Nature) must be degraded and diminished. Most of those who are dedicated to the conservation of Nature (at least here in Spain), do not seem to realize that this physical fact (which is an effect of the laws of thermodynamics) and continue being committed to making compatible socio-economic development and the conservation of Nature. At some point it will be necessary to accept that "we can't eat the cake and still have it."

b) Due to the absence or almost absence of human infrastructures inside, wilderness offers a place of solitude in which one can wander through his own means (on foot). For some humans, the experience of visiting a National Park, with hordes of tourists and artificial infrastructures that create an environment of domestication and control, is not the same as entering a wild territory where one can be alone and calm, enjoy direct contact with Nature, disconnect from the influences of the social environment, or test one's own abilities outside the comforts of modern society and thus experience true freedom. That is, wild environments enable a relationship between the human being and Nature that is different from the visit to a garden or a "natural" area designed and organized by humans.

---

[8] "Espacios Naturales Protegidos (ENPs)" in the original. *Translator's note.*

[9] In the informative brochure *Un territorio singular Red de Espacios Naturales de Castilla y Leon* (Reyero, 2007), edited by the regional government of Castilla y Leon, it can be read: "What is a Protected Natural Space? It is a rural area with special natural values that must be preserved *through sustainable development models.* [...] The protection of these natural spaces aims to achieve also the improvement of the quality of life of the populations that live in them, promoting actions to revalue natural, historical and cultural resources as the basis of a model of **sustainable socio-economic development**. *This is the main objective* of the **Natural Parks Program of Castilla y Leon** ..." (italics mine).

[10] Two recent very illustrative examples of how the conservation of Nature in Spain remains in the background even within the PNSs:

c) The productive-economic activities allowed in the PNSs, from the more traditional activities of the primary sector, such as agriculture, livestock or logging, to the tertiary sector activities that have emerged with force in recent decades, such as sport competitions or the so-called "ecotourism", have an impact on ecosystems that is usually underplayed by Spanish conservationists. I will briefly mention some of the most obvious effects of two of the most productive activities extended inside the PNSs. These activities are usually considered in Spain (even by a great number of environmentalists) as innocuous or even beneficial to the health of ecosystems: extensive livestock farming and logging (sustainable or not).[11]

i) With respect to extensive livestock farming:

— Overgrazing.[12]

— Competition and displacement on wild herbivores. (Purroy and Varela, 2016. Page 118)

— Creation and maintenance of gravel roads for livestock and forestry use. (Grande del Brio, 1982)

— Creation and maintenance of fences and barbed wires that inflict casualties among wild fauna. (C.R.F.S. Las Dunas, 2017. Page 6)

— Dogs on the loose in the bush.[13]

— Pressure towards the administration so that it authorizes the control of predators.[14]

— Poaching of predators. (Alvarez, 2014; Barrientos, 2014)

— Degradation of riparian vegetation with the negative effects that this supposes for fish fauna and hydrological dynamics. (VV.AA., 2016; Velasco *et al.*, 2019)

— Pollution and risk of eutrophication of lakes and ponds. (Granados *et al.*, 2006; Felip *et al.*, 2014)

ii) With regard to forest exploitation, it eliminates or reduces three basic aspects of a mature and wild forest, so that these end up having hardly any presence in a managed forest where silvicultural treatments are carried out:

— Old trees standing and in abundance (healthy, dead or decrepit).

---

[11] Two examples: Herrera and Majadas, 2019 and Mendez, 2014. In the first article, the extensive livestock farming is presented as an activity that takes place in places where "wild life flourishes", with "potential for integration in the dynamics of ecosystems" and "enhances the conservation of many of the most valuable habitats". The second article talks about a "new forestry" which, in theory, will make the extraction of wood from forests compatible with conservation of saproxylic organisms, and which the author proposes as an alternative to conventional logging.

[12] In the following references, overgrazing is cited as an ecological problem: Barquin *et al.*, 2018. Page 101; several authors, 2009. While this other text deals exclusively with overgrazing: Martinez-Murillo and others, 2011.

[13] Much has been said about the ecological problems that feral dogs cause, but very little about those created by the dogs that guard the livestock. These remain loose in the bush 24 hours and have some effects on the environment similar to that of feral dogs.

[14] For example, see the article "105 lobos han sido abatidos desde 2015 hasta el pasado 31 de octubre en Cantabria con la autorizacion del Gobiemo", *El Diario de Cantabria*, November 7, 2018:

— Abundant decaying dead wood on the ground (including large logs).
— Abundance of saproxylic organisms (considered "pests" in forestry).

If all the definitions of wilderness areas around the world agree on something (European Commission, 2015), is that productive-economic activities, such as these, should not be present in these places.

5. So what can be done to protect wild Nature?

So far in this text I have dealt with the issue of the protection of wild Nature as if the only way to achieve such a thing was the legal protection of wild spaces or "wilderness". However, the following questions may be asked:

5.1. Is the legal protection of wild areas effective in the long term for protecting wild Nature?

As I have tried to show in the text (for example in note 8), in some countries, like Spain, the wildness of ecosystems is not even taken into account in terms of conservation. This is a first impediment for the strategy of defending wild Nature through legally protecting the largest possible territory being effective in the long term: Wild Nature has to be taken into account by governments and administrations countries, and this is not always the case.

Furthermore, this strategy is based on the assumption that a balance can be achieved between wild Nature and current modern civilized human societies (which we will call from here on in this text: techno-industrial society -TIS-). Actually, with a constantly increasing human world population and a technological level also constantly increasing, the possibilities of keeping areas out of development and degradation are ever fewer. The matter, energy and space that the STI needs to grow (or simply to stay steady) along with the waste generated by its everyday activity make the level of transformation of all planetary ecosystems be also in constant increase and fewer and fewer areas remain free from TIS interference. With this trend, the pressure on wilderness, protected or not, will also be increasingly higher over time.

On the other hand, there are effects of the technological progress (such as air pollution or change climate) that escape the legal barriers that may be dictated for protecting certain places and intrusions into protected natural spaces are common (both due to poaching and due to permissiveness or negligence by the managers themselves). And all this assuming that the fact that an area is legally protected today means that it will be protected legally forever, which to me seems too much to assume (in addition to the fact that humans rarely obey laws wholly, laws can and do change over time). The ecocentric conservationists themselves (those who take wildness as reference for con-

servation), recognize that even the protected wilderness areas are gradually degrading (albeit at a slower rate than the rest of the territory).[15]

Therefore, although the legal protection of wilderness areas is a laudable end (it is better than nothing, since it delays the degradation of the protected areas), everything indicates that it will not serve in the long run to protect the wilderness from the advancement of the TIS.

5.2. Are there other alternatives to protect the wild nature?

The three alternatives (or complements) to legal protection of wild ecosystems that I have regularly seen that conservationists and others who recognize the important value of wild Nature mention, are the following. The first two have to do with the reform of the TIS and the third with the collapse thereof:

5.2.1. Regulation of world population size and per capita consumption

A common response to objections to the legal protection of wild ecosystems is that, then (or in addition to it), the TIS should be reformed in such a way that the world human population can be stabilized or reduced and the growth of the level of per capita consumption can be reversed, either through political programs or through energy and technological improvement, or through both. Regarding this, it is necessary to take into account that:

(1) Technological development in itself (even in the absence of population growth and of increase in the level of per capita consumption) also amplifies the impact that human societies have on wild Nature. This is so due, among others things, to the Jevons paradox (Foreman & Carroll, 2014). This comes to say that the the energy saved in one part of a system does not help the whole system to consume less energy, but it allows this energy to be used in other parts of the same system instead, eventually increasing total consumption. In the case at hand, this means that, increasing energy efficiency generated by technological development, does not and will not entail a decrease in the total impact generated by the TIS on wild Nature, but just the opposite. In this sense, it is curious that many of those who alert, rightly, to the ecological problems that the demographic growth and the increase in per capita consumption imply, nevertheless commit the great clumsiness of seeing technological development as a reducing factor

[15] For example, in Buckley (2010), p. 3 and Wolke (2014), pp. 4–5.

of the effects of population growth and consumption rather than seeing it as what is actually is, a multiplying (besides a causing) factor of the previous two.[16]

(2) The simple maintenance of the TIS (just without technological development, growth population or increase in the level of per capita consumption) requires a constant search for resources in areas not yet transformed. Many raw materials and basic energy sources (non- renewable, non-recyclable and hardly substitutable on a large-scale) for the operation of the TIS (such as fossil fuels or certain minerals)[17] cannot be extracted indefinitely in ecosystems already degraded, they must be continually sought in ecosystems not yet exploited instead. And sooner or later the opportunity or the need for extracting them will present itself even in protected wild areas.

5.2.2. Education

In addition to the above, many texts on the conservation of wild Nature tend to emphasize the importance of education, awareness-raising and propaganda in promoting some values among the population. They usually go even further, up to the point of implying that the ultimate cause of the degradation of wild Nature is that humans don't have the right mindset. That is, if humans possessed an "environmentalist" and respectful mentality, the degradation of wild Nature would cease.

However, it is necessary to take into account that:

(1) The ultimate and main causes of ecological problems are material (social, demographic and technological development) not ideological and, therefore, the solutions should act on these material causes, not on ideological causes that, at best, are not the main or ultimate causes, but only secondary.

(2) Convincing people nicely (that is, rationally, through arguments and facts) to put Nature before everything else is doomed to failure in the vast majority of cases. Most humans naturally tend to care primarily or exclusively about ourselves or our loved ones, as well as about what affects us directly. In addition, we tend to think mainly or exclusively in the immediate and short term, and based on emotions and not on logic and facts.

(3) Therefore, to change the mindset, values and behaviors of the people would require means of propaganda, indoctrination and coercion on a large scale that would involve large organizations, a large and complex social system, and an advanced technology, as well as maintaining such media over time so that the population do not stop thinking and behaving as desired. That is, it would be necessary to maintain

[16] Interestingly, the authors of the referenced text on Jevons' paradox are an example of such myopia.

[17] And even some raw materials usually considered "renewable", such as wood, are not really so renewable (at least today): the world timber market is currently supplied thanks to the deforestation of wild areas (especially in tropical regions)

the material conditions that cause the current ecological degradation, which would be absurd.

(4) Even if the population could be rationally persuaded to assume willingly the ecocentric values, this would not imply necessarily that society's impact on wild Nature was reduced. Humans have a high capacity for self-deception and excuses, to develop easy but ineffective symbolic behaviors that calm our conscience and cheat on it, etc. (There are many examples of this in religions). So an "ecocentric" industrial society would not reduce its ecological impact to a great extent. Most likely (from what was said in 2) most people would not go beyond developing some type of religion or symbolic behavior thatwould allow them, on the one hand, to worship Nature and feel good about themselves (appease their consciences) believing that they thus comply with ecocentric values and, at the same time, on the other hand, to continue living a techno-industrial way of life (and therefore, in practice, acting contrary to these values and with a very large real impact on Nature).

(5) Trying to change people's minds is actually a form of social engineering, that is, to try to control the development of a society in order to direct it towards the achievement of certain goals. And, like any other form of social engineering, it doesn't work in the long term and it even leads to new problems or worsens the old ones, because the development of a society is unpredictable and therefore uncontrollable (Freedom Club, 1995, paragraphs 99110).

5.2.3. The impending collapse of modern industrial society

At this point, the next question to ask oneself is: if it is not possible to reform the TIS to protect wild Nature in the long term, what alternatives do we have?

And it is clear that, However much difficult it may seem to many people to accept, only two options remain:

— That the TIS goes ahead. In this case, it will unavoidable that the TIS ends up transforming, dominating and degrading in the long term and at the planetary level every redoubt of wild Nature, including protected wilderness areas. Even if the TIS disappeared later, by then the transformation of ecosystems, species and other natural processes could have reached a level that would be irreversible (at least for the next several millions of years).

— That in a not very long period of time (let's say in a few decades), the TIS disappears. In this case, wild Nature will have been largely saved, since it would be difficult that the conditions that allowed the industrial revolution to occur happened

again in at least hundreds of thousands of years,[18] and civilized pre-industrial societies (which are the largest and most complex type of human societies that could arise if the TIS disappeared completely) do not represent a comparable threat to Nature to that represented by the TIS (although they also degrade Nature to a great extent).

Having advanced so far, it is worth asking: and how would it be possible that the TIS disappeared (if it could be posible at all)?. Different scenarios can arise: a spontaneous collapse, a human- induced collapse, a planned gradual dismantling, or a mix of all or some of these possibilities. But there is no easy solution: all the options would mean a drastic change in our ways of life and very high levels of human death and suffering.

So, what is really important? If we consider wild Nature as the most important thing to preserve (above human cultures), the only long-term solution is the end of its greatest threat: industrial civilization. Therefore, that to what conservationists and ecocentric wild Nature lovers should direct our efforts is to publicly defend and favor that humanity changed completely its course and left the path of development. That is, to publicly defend and favor, to the extent of our possibilities, the collapse and the end of the industrial technological system, since it is the only option that can preserve wild Nature in the long term.

Some of the people who recognize the immense value of wild Nature cling to the belief that (1) the TIS will shortly collapse on its own, so they do not find it necessary to work to cause or accelerate such collapse in order to preserve wild Nature. Furthermore, this belief is usually linked to the idea that, due to some characteristics of human psychology, (2) you cannot form a movement that makes the course of society change. (Foreman and Skrbina, 2014, pp. 6–7)

(1) Regarding the first idea, the TIS has shown, especially in the last decades, adaptation and resilience to the problems that arise in relation to its functioning. There is no guarantee that future TIS problems (being them problems regarding energy supply, environmental problems or problems related to the control of the human behavior) will cause the collapse of the TIS on their own. Those who hold such a thing seem as if they had a crystal ball to divine the future, since their forecasts go far beyond what can be inferred logically from the empirical facts. For example, it is quite likely that some of the most important raw materials and energy sources for the operation of the TIS to date they will not be sufficiently abundant in the immediate future to continue the increase in the human standard of living that we have seen in recent centuries. So far, this is only what one can say, based on the available data and physical laws, with a high probability of being a correct forecast. This and the affirmation that the TIS will collapse and disappear are worlds apart, and the mind should not leap lightly from the former to the latter. Other possible scenarios should be considered. Among them: the probability that the TIS will achieve stabilization at a lower energy level long enough

[18] I mean that for a long time some of the conditions that led to the industrial revolution, such as the availability of sources of energy with a very high energy performance or the abundance of easily extractable minerals, would not exist anymore.

to find other sources of energy that allow it to continue growing, the probability that the technological system will recover when it is close to collapse if there is no movement and/or ideology that promote destroying what will be left of the system before it can be reconstructed or the probability that, even if the TIS eventually collapses, then it might be too late to save many of the wild species and ecosystems that exist on this planet (see point 6) or even the human species as we know it currently.[19]

(2) With regard to the second idea, it is necessary to take into account that, often, the radical changes in human societies are promoted and sought by active minorities. The fact that, broadly speaking, human psychology does not favor that the majority of people are going to support and work properly for such a goal, is not an impediment to the formation of a movement for which only the work of a minority of the population is necessary, as long as this minority is resolute and effective, of course. Moreover, the very fact that the few people who could work for the creation of said movement refuse to do so with the excuse that it is impossible to create this movement, is one of the factors that have an influence on that, indeed, such a movement does not arise.

6. Summary and conclusions:

Wild Nature, the autonomy of natural processes, is currently threatened by the development of the most complex of social system generated in human evolution: techno-industrial society.

There are many reasons why wild Nature is invaluable, and this has led many of those who recognize them to try to protect the wild in various ways. The legal protection of wilderness (a widespread practice in many countries but not in the Iberian Peninsula), the regulation of human population size and per capita consumption, or education, are three of the most common ways in which ecocentric conservationists try to protect the wild. The rational analysis of these strategies reveal that they will not be adequate or sufficient to protect wild Nature in the long run (something recognized to some extent even by some ecocentric conservationists).

Therefore, if we consider wild Nature as the most important thing to preserve (above human cultures), the only long-term solution is the end of its greatest threat: industrial civilization (the social system whose technology is based on motorization). Due to this, that to which we the conservationists and ecocentric wild Nature lovers should direct our efforts is to publicly defend and favor that humanity completely changes its course and that the path of development is abandoned. That is, to publicly defend and favor, to the extent of our possibilities, the collapse and the end of the industrial technological system, since it is the the only option that can preserve wild Nature in the long term.

[19] Although serious doubts about whether saving the human species is a desirable goal (in view of the ecological degradation that some of the human social systems have generated) can be raised, there is no doubt that saving the autonomy of the wild is.

In this regard, it is not admissible to cling to the illusion that the industrial technological system (and, therefore, the social system that it sustains) is going to collapse on its own shortly. There is no guarantee that it will happen this way and, if it did so in the future, it might be too late for a good part of the wild species, ecosystems and natural processes. Wild Nature needs to get rid of its greatest threat: modern technology, now that it still has time.

References:

— Alvarez, D. 2014. "Masacre de lobos en Cantabria: adios a la manada de San Glorio". *Quercus* magazine No. 336. Pages 26–27.

— Barqum, J.; Alvarez-Martinez, J.M.; Jimenez-Alfaro, B.; Garda, D.; Vieites, D.; Serrano, E.; Gonzalez-Diez, A.; Tejon, S.; de Luis Calabuig, E.; Taboada, A.; Purroy, F.J.; Del Jesus, M.; Naves, J.; Fernandez-Gil, A.; Serdio, A.; Javier Lucio, A.; Suarez, R. and Araujo, J. 2018. "La integracion del conocimiento sobre la Cordillera Cantabrica: hacia un observatorio inter- autonomico del cambio global". *Ecosistemas* magazine No. 27. Pages 96–104.

— Barrientos, L. M. 2014. "Furtivismo: el mayor azote del lobo iberico". *Quercus* magazine No. 336. Pages 16–24.

— Buckley, R. 2010. "The Sustainability of Wilderness".

www.onlineopinion.com.au/view.asp?article=10145&page=0.

— European Commission. 2013. *Guidelines on Wilderness in Natura 2000.* Technical Report -2013069. Brussels: European Union.

— C.R.F.S. Las Dunas. 2017. *Informe Las Dunas 2017.* Available on:https://15f8034cdff6595cbfa1- *1dd67c28d3aade9d3442ee99310d18bd.ssl.cf3.rackcdn.com/10a0b0278aaca203080105fd0898ff98* /informefinaldunas2017.pdf

— Dudley, N. (ed.). 2008. *Directrices para la aplicacion de las categories de gestion de areas protegidas.* Gland, Switzerland: IUCN.

— Felip, M.; Riera, J.L.; Camarero, LL.; Diaz de Quijano, D. and Gimenez, P., 2014. "Efectos de la actividad ganadera en los lagos del parque nacional de Aiguestortes i Estany de Sant Maurici: aportes de nitrogeno y riesgo de eutrofizacion". Ministerio para la Transicion Ecologica. Available on:www.miteco.gob.es/es/red-parques-nacionales/programa-investigacion/4-

efectosactividadganadera tcm30-66006.pdf

— Foreman, D. 1994. "Where Man Is a Visitor" in *Place of the Wild,* David Clarke Burks (ed.), *Island Press.* Pages 225–235.

— Foreman, D. 2008. "The Real Wilderness Idea" in *The Wilderness Debate Rages on*, Michael P. Nelson and J. Baird Callicott (eds.), University of Georgia Press. Pages 378–397.

— Foreman, D. 2014. “The Myth of the Humanized Pre-Columbian Landscape”, in *Keeping the Wild*, George Wuerthner, Eileen Crist and Tom Butler (eds.), Island Press. Pages 114–125.

— Foreman, D. and Carrol L. 2014. “Population or Affluence -or Technology?”, in *Man Swarm: How Overpopulation is Killing the Wild World*, Live True Books.

— Foreman, D. and Skrbina, D. 2014. “Algunas preguntas a Dave Foreman”, in https://www.naturalezaindomita.com/textos/naturaleza-salvaje-y-teora-ecocntrica/algunas- preguntas-a-dave-foreman.

— Freedom Club, 1995. *Industrial Society and Its Future.*

— Fundacion Siglo para el turismo y las Artes de Castilla y Leon, 2018. *Reservas de la Biosfera de Castilla y Leon.* Regional government of Castilla y Leon.

— Granados, I.; Toro, M. and Rubio-Romero, A., 2006. *Laguna grande de Penalara. 10 anos de seguimiento limnologico.* Direccion General del Medio Natural, Consejeria de Medio Ambiente y Ordenacion del territorio. Autonomous region of Madrid. Page 125. Available on: https://www.researchgate.net/publication/224015794 Laguna Grande de Penalara 10 anos de se guimiento limnologico/link/02faf4f8bdd68b5e89000000/download.

— Grande del Brio, R. 1982. *La ecologia de Castillay Leon.* Ambito ediciones. Page 97.

— Herrera, P. M. and Majadas, J. 2019. “(,Como afrontar la interaction entre ganaderia extensiva y fauna salvaje?” *Quercus* magazine No. 406. Pages 80–82.

— Jimenez, J. *et al.* 2019. “El lince beneficia al habitat al controlar a otros depredadores.” *Quercus* magazine No. 406. Page 48.

— Keim, B. 2014. “Earth is not a garden”, inhttps://aeon.co/essays/giving-up-on-wilderness-means- a-barren-future-for-the-earth.

— Martinez-Murillo, J.F.; Ruiz-Sinoga, J.D.; Gabarron-Galeote, M.A. 2011. “Efectos hidrologicos y erosivos del sobre-pastoreo a escala detalle en el monte mediterraneo humedo (Serrama de Ronda, sur de Espana)”, in *Cuaternarioy Geomorfologia* No. 25 (3–4).

— Mendez, M. 2014. “^Como gestionar la madera muerta y conservar los organismos saproxtiicos?”. *Quercus* magazine No. 336. Pages 32–38.

— Nash, R. F. 2014. “Wild World” in *Keeping the Wild*, George Wuerthner, Eileen Crist and Tom Butler (eds.), Island Press. Pages 183–187.

— Palau, J. 2019. “El Smdrome de la Referencia Cambiante a la hora de fijar objetivos de conservacion”. *Quercus* magazine No. 400. Pages 28–35.

— Purroy, F. J. y Varela, J. M. 2016. *Sknmiferos de Espana.* Lynx edicions.

— Reyero, J. M. 2007. *Un territorio singular. Red de Espacios Naturales de Castilla y Leon.* Regional government of Castilla y Leon.

— Soule, M. E. and Noss, R. F., 1998. “Rewilding and biodiversity: complementary goals for continental conservation”. *Wild Earth* 8(3): Pages 18–26.

— Velasco, J.; Zarandona, R.; Sanchez, J. and Fraile, J. 2019. "En favor del bosque de ribera mediterraneo". Quercus magazine No. 400. Pages 46 ("Servicios ecosistemicos del bosque de ribera").

— Several authors, 2016. "Unidad de Trabajo 9: Proteccion y mejora de ecosistemas acuaticos". *Gestion de la pesca continental*. C.P.I.F.P. Lorenzo Milani. Pages 210–216.

— Several authors, 2009. *Bases ecologicaspreliminarespara la conservation de los tipos de habitat de interes comunitario en Espana*. Madrid: Ministerio de Medio Ambiente, y Medio Rural y Marino.

— Wolke, H. 2014. "Wilderness: What and Why?" in *Keeping the Wild*. George Wuerthner, Eileen Crist and Tom Butler (eds.), Island Press. Pages 197–204.

- https://vieja.patrimonionatural.org/noticias/general/2020/10/28/leon-acogera-un-centro-homologado-para- la-practica-de-mountain-bike -con-mas-de -320-km-de -rutas

- https://patrimonionatural.org/noticias/noticia/sale-a-licitacion-la-construccion-del-mirador-de- aldeadavila-un-nuevo-atractivo-en-arribes-duero.

The first news is about the creation of several hundred kilometers of bicycle routes from mountain bikes, in the heart of the Cantabrian Mountain Range, reopening tracks and roads that were being "lost", i.e., that were being recovered by wild Nature. Small mammals, amphibians, reptiles and invertebrates, for whom tracks and their slopes are often an impassable barrier, or who are often crushed to death by road traffic (and this includes bicycles), along with the habitat fragmentation or the erosion resulting from the creation and existence of tracks or roads, have been left in the background. Alto Bernesga is an area currently declared as "Special Conservation Zone" in the Natura 2000 Network and "Biosphere Reserve" (Fundacion Siglo, 2018). The second news is about the construction of a new viewpoint, with a protruding elevated platform, a parking and a pedestrian path, in Arribes del Duero. It seems that, as there were "only" three viewpoints in the area, so it was necessary to build another one. The Arribes del Duero is declared currently as "Natural Park" (Reyero, 2007) and "Biosphere Reserve" (Fundacion Siglo, 2018).

www.eldiariocantabria.es/articulo/cantabria/total-105-lobos-han-sido-abatidos-2015-pasado-31-octubre- cantabria-autorizacion-gobierno-autonomico/20181107132636052852.html.

Leftism, Techno-Industrial System and Wild Nature[1]

By KaraQam (August 2020)

Introduction

Today, when it comes to anti-system rebellion and changing the "order," what is generally understood is a set of leftist views and behaviours instead of a movement that takes wild Nature as the core value and wants to destroy the techno-industrial system to protect wildness. At first glance, it seems that there is a similarity and intersection between these two very different worldviews: leftism and a movement that seeks a system change (or rather the elimination of the physical infrastructure of the existing technological system).[2] This seeming similarity and the confusion emanating from it are one of the biggest obstacles to the formation of an effective movement against the technological system. Therefore, it is essential to reveal the huge differences between these two currents in order to establish an effective movement against the techno-industrial system.

Leftism

So what is leftism? Leftist thought emerged with the Enlightenment, developed with the industrial society that started to emerge in almost the same period, and constitutes the basic value system of the industrial-technological system. We can say that leftism passed through three stages since the 18$^{\text{th}}$ century, when it emerged. The first stage was constituted by the currents that defended rational thought against traditions and religion, the dominance of scientific and rational thinking in the management of society, the equality of people before the law, the abolition of the privileges of the aristocracy, the removal of the church's influence in economy and society, the replacement of monarchies by republics and the realization of parliamentary management systems

[1] I would like to thank *Ultimo Reducto* for his comments, suggestions and corrections. Without his help this paper wouldn't have been possible in its present form.

[2] Especially with the green anarchist and anarcho-primitivist variants of leftism.

and government administrations, increasing material prosperity and completely eliminating poverty, etc. and it was what socialist leftists later would call the bourgeois left. This first wave left crystallized and expressed the ideas of the new society that were being built in Western Europe and North America then. The main pillar of the first wave left's world-view was that humanity, with its rational thinking, science, and technology, had an omnipotent power over Nature and society and therefore the ability to create on earth the most perfect and materially abundant society by deciphering the secrets of the universe; and all the other subsequent waves and forms of the left inherited this idea.

The second wave of the left was socialism who advocated that the "perfect" society can only be established by the general distribution of material abundance to every segment of society and the way to achieve this would be the total collectivization and rational control of the economic activity. Socialist left's first manifestation was during the French Revolution with Babeuf and his *Conspiracy of the Equals.* Henri de Saint Simon and Charles Fourier developed the socialist ideas as a continuation of the Enlightenment and the first wave bourgeois left during the first half of the 19th century. They preached that brotherhood of men with the combination of the science and industry would bring paradise on Earth. In the first industrialized country of the world, Britain, Chartist Movement demonstrated the political power of the new mass urban proletariat during the 1830s. By the second half of the 19th century, Marx and Engels shaped the final ideological contours of the second wave left by tying it intrinsically with technological development. According to this, a classless, stateless, most prosperous and perfect society will arise with the technological development. And as industry developed and urban proletariat became more and more numerous, the political power of the second wave left increased.

Socialist left claimed that they were defending the rights of the lowest, poorest and most dispossessed classes in society, especially the new working class that had emerged with the industrial revolution. In addition to the developments that the radical bourgeois leftists wanted to happen, socialist leftists wanted to implement a complete socialization in the economic sphere — establishing a rational and planned social system through the full collectivization of the production and consumption activities of the society and thus expanding the material abundance to every member of the society. As a result of the activities of this second left wave, the technoindustrial system was established in Western Europe and North America by fully integrating the masses that make up the labour force it needed to continue its activities. The relatively stable[3] system which has settled completely in the developed western countries after the Second World War, has proved to be more successful and financially abundant than the command economies of the Eastern bloc countries. However, in accordance with

[3] Due to the accelerated technological development it incorporates, techno-industrial society is very dynamic and constant change is an inherent part of this society. What I refer here as social stability is the smooth functioning of the social machine without disruptions.

the development of the techno-industrial system, traditional agricultural societies were completely dispersed and, as a result, major changes took place in traditional values, family structure, daily life, etc. From the mid-sixties, the results of these developments have produced a third left wave. A new left wave that claims to identify with and defend the oppressed groups in society, focuses directly on people's daily lives and behaviours and uses them to better socialize[4] people in order to increase social cohesion and stability.

With all these forms it has assumed throughout history, the left has provided the values and behaviours necessary for the social system that emerged with the industrial revolution to develop and stabilize itself, and to complete its shortcomings, by obtaining the consent of the people. With this role that it plays in the system, the left is the main ideology, which is part of the superstructure of the techno-industrial system. It contains the theories on institutions, forms of behaviour, norms and values necessary for the efficient functioning of the highly complex techno-industrial system: Social solidarity, non-violence, equality before the law, freedom to perform surrogate activities[5] controlled by the system, social responsibility, importance to merit; in short, the sum of all the values which are constantly pumped in the mainstream media and the education system, and which try to turn people into good citizens. These values emerge as the complexity of the society, the number of people living physically together, the number of components of the system, and the intensification of the relationships between these components increase, because leftist values enable the techno-industrial system to survive, function more efficiently and be stronger by putting millions of

[4] I use the term socialization here as Theodore John Kaczynski uses it in *Industrial Society and Its Future,* P.24: "Psychologists use the term 'socialization' to designate the process by which children are trained to think and act as society demands. A person is said to be well socialized if he believes in and obeys the moral code of his society and fits in well as a functioning part of that society. [...]" In this definition Kaczynski refers especially to the children, but in fact socialization acts also on adults, though usually not so easily and intensely.

[5] In modern techno-industrial system, fundamental needs (shelter, food, security, etc.) of the people are supplied by the social collectivity without a meaningful effort on part of the members of this society. Many people might spend hours of time in their jobs, but for most people the things they do are not directly related to their fundamental physical needs and they do absurd, monotonous, minutely divided tasks which are not intellectually and physically stimulating. But *Homo sapiens,* during the millions of years of evolutionary process, acquired a biological need of being active in order to satisfy his needs with his own effort, and this process of using one's own talents and capacities in order to satisfy his fundamental needs is crucial for one's psychological health. When the most important needs are satisfied by the social collective, people find themselves in a vacuum. And this vacuum needs to be filled with other activities in order to alleviate the grossest consequent psychological disturbances that would greatly harm the system and perhaps make its functioning impossible. Since these activities (climbing the corporate ladder, devotion to a scientific or a specific research area, hobbies, consumption of the system's commodities, dedication to the solution of issues such as environmental problems, racism, sexism, etc.) are not directly related to the satisfaction of the fundamental needs and try to substitute the effort that would normally be exerted in order to satisfy them, they are called surrogate activities. For a more detailed discussion of the concept of surrogate activities see Kaczynski, *Industrial Society and Its Future,* fl 38–41.

people to work together in a coordinated manner. Leftism is not against the techno-industrial system; on the contrary, it acts as insurance for this system. By adopting the fundamental values of the techno-industrial system and pushing them beyond the mainstream of this society, it controls how well people comply with these values and forces them to change themselves in line with these values. Thanks to this relationship with leftism, the techno-industrial system corrects itself and constantly enhances the efficiency of its own functioning. Every topic in which leftist ideology criticizes the system, such as gender inequality, ethnic problems, environmental problems, bribery, nepotism, violence exerted by individuals towards each other in society, etc. consists, in fact, of the problems that the system faces in order to keep on functioning and developing itself smoothly, so if the system resolves them, it will work more efficiently. Leftism helps the system to identify and face these problems, and thus to solve them and function better.

The techno-industrial system expands its activities to the extent that its problems are solved and it grows by destroying, subjugating and replacing wild Nature. Consequently, there is an insurmountable contrast between the values that oppose the techno-industrial system in the name of wild Nature and the leftist ideology, which is based on the values of this very system and helps it to improve its functioning and to develop itself.

Wild Nature

Wild Nature refers to the ecosystems that exist and function on their own, apart from the intervention of complex human communities. Wild biological species, including primitive humans, acquired through a natural selection process some biological features that determined the behaviour, feelings, and living conditions that were suitable for them. Nature enabled them to acquire these features, and the existence of these species, together with the non-living natural environment, without the intervention of complex societies, constitutes wild Nature. The emergence of complex societies was a gradual process of human communities becoming systems that control and regulate natural processes for their own growth and self preservation.[6] The interference of human societies with wild Nature greatly intensified and changed qualitatively with moving to settled life and domestication. The genetics of plants began to be regulated through agricultural activities, by the needs of complex human communities instead of by natural selection, and likewise some wild animals were subjected to an artificial

[6] I define complex societies, as Tainter does in *The Collapse of Complex Societies,* as those societies which have inequalities (characterized as vertical differentiation, ranking, or unequal access to material and social resources) and heterogeneity (referring to the number of distinctive parts or components of a society, and at the same time to the ways in which the population is distributed among these parts) in its composition. See, Tainter, *The Collapse of Complex Societies,* 2005, Cambridge University Press, Chapter 2, "The Nature of Complex Societies".

genetic selection through the livestock activities, thereby creating domestic species that were not found previously in the wild. This process expanded and intensified gradually. The fact that human communities began to meet their nutritional needs by directly producing their own nutrients, instead of hunting and gathering, enabled them to generate a large surplus of energy compared to the nomadic hunter-gatherer lifestyle. This surplus of energy led to the demographic growth of these established agricultural societies and to the formation of classes and components within these societies that performed different functions in them.[7] The agrarian societies that had accumulated more population and material power greatly increased their geographical dimensions and started to spread all over the world. Since these complex societies destroyed the autonomous functions of the wild in favour of their artificial functions, their spread over the world meant the gradual destruction and narrowing of the wild. Wild ecosystems were increasingly transformed into settlements, fields or pastures, along with wild animals and plants, many of which were transformed into domestic species or just eliminated. Nomadic hunter-gatherer human communities remained only in the ever fewer remote and non-civilized parts of the world due to this geographic spread of complex communities. It is the complex societies' physical technological infrastructure and demography that gives them their material power. Technological infrastructure gives complex societies the power to absorb and transform the natural processes and resources into their own activities and structure and feed bigger populations. Thus, as the rate of technological development accelerates, the expansion of human societies at the cost of the destruction and subjugation of wild Nature also accelerates. For this reason, in techno-industrial societies (complex societies emerged since industrial revolution), which can absorb the energy of fossil fuels into their own metabolism, the destruction and subjugation of wild Nature has become much faster and larger, and this speed and scope will increase as the technological development continues.

Homo sapiens is the result of hundreds of millennia of nomadic hunter-gatherer lifestyle. Our physical and mental structure has evolved in accordance with this lifestyle. Although they varied in different parts of the world, according to different fauna and flora, and climatic conditions — i.e., to different ecosystems-, the nomadic hunter-gatherer lifestyles were based on people meeting their vital needs through their autonomous activities within wild Nature. Nomadic hunter-gatherer human societies never included as many individuals as not to allow everyone directly know any other. This prevented the occurrence of different classes and components in these communities and allowed people to perform the activities to meet their physical needs directly and autonomously, without being reduced to a tiny part of a large collective.[8] This

[7] Those hunter-gatherer societies which had very rich stationary food resources also developed specializations, classes and components. But in the absence of food production, these phenomena would have been limited to places where those rich stationary food resources existed and wouldn't have spread to the same extent of the sedentary, food-producing societies.

[8] Not only nomadic hunter-gatherer societies, but some isolated horticulturalist societies (e.g., isolated Amazonian tribes, like the Siriono or the Machiguenga) have also these characteristics of au-

way of life was not the Garden of Eden pictured by anarcho-primitivist leftists, where there were no physical efforts and difficulties, everything was abundant, and flower children were playing all day, but it was a lifestyle that allowed people to express their natural tendencies freely in an environment to which they were adapted.

Complex societies

People all over the world lived a nomadic hunter-gatherer lifestyle until about ten thousand years ago. The time-frame that has passed since is too short to make any kind of meaningful genetic change. Therefore, current humankind is a species of living being trapped in such life conditions that do not fit its natural structure. With the agricultural revolution and food production, complex societies emerged in which people was forced to live outside the lifestyle and environment where their natural psychological characteristics had developed, so their natural behaviours tended to be unsuitable for the cohesion and the efficient functioning of these societies. For this reason, people living in complex societies also had to be "tamed" and socialized to ensure that these complex crowded societies functioned steadily.

Complex societies, which appeared with the intensification of agriculture and animal husbandry and the resulting enlargement of settled societies, had much larger populations compared to nomadic hunter-gatherer communities. There appeared occupational specializations in these complex societies. They began to include different classes such as soldiers, clergy, bureaucrats, farmers, slaves. Since the structure of these societies was complex, people had to specialize in a particular activity, they had to meet their needs as part of a large collective, instead of through their own autonomous activities. They had to stay in a crowded environment, apart from the natural environment to which they had adapted through millions of years, and they had to adopt a lifestyle that was not suitable for their nature. People trapped in these complex societies were in a situation where they could not freely express their wild nature. As technology evolved, the size and complexity of societies increased. This increased social hierarchy, division of labour, and therefore the collectivistic character of these communities and led people to live lives that were ever more disconnected from their own nature. They needed to live together and cooperate with an anonymous crowd, they needed to undertake tasks which were neither physically nor mentally appropriate to their human nature, they found themselves in social structures which eliminated their autonomy and took away the initiative from their lives, they lost the contact with wild Nature and were confined to artificial environments. (With the advent of the techno-industrial societies this has gone to extreme degrees: many members of these societies aren't aware of the existence of wild Nature and some even have gone as far as to

tonomy, mutual knowledge and absence of classes. Therefore it seems that these traits depend strongly on group's population size and density and there is a gradual fading of these traits as population size and density increases with the advent of more intensified food production methods.

claim that it has never existed.) Being sentenced to such a life led to some physical and psychological problems. These problems needed to be alleviated and kept at a level that would not hinder the efficient functioning of these societies. In other words, people should be adjusted to the lifestyle of a society that does not conform to their own natural impulses. And this adjustment has entailed the ever stricter control of the human behaviour.

The great gods

Complex societies, in order to function and survive, needed to create a social cohesion, a narrative of unity, an ideology of togetherness and the necessary moral codes and values to make large numbers of people to behave in appropriate ways in the context of crowded mass societies. The first method used by agrarian societies in order to achieve this was the great gods.[9] Great gods track people everywhere, evaluate their behaviour according to moral principles and punish or reward people based on how much they adhere to these principles. Living in large social groups was a phenomenon that appeared at a certain stage in history, with the emergence of complex societies. Prior to this, people did not live surrounded by people they did not know, in crowded and large communities. The beginning of this kind of life was a very new event for human history. The longest period of human history, before this, had been spent in small communities where individuals had daily relationships with just a small number of people. In these small communities, strangers, that is, individuals from outside the group who were not directly known, were viewed with suspicion. In complex societies however, individuals have to live their lives surrounded by a large number of people they do not know and have to cooperate with them for their own physical needs, shelter and defense.

Solidarity developed in small communities (communities small enough to let people know each other directly) through kin selection and mutual or reciprocal altruism. According to the principle of kin selection, we help our relatives because they share the same genes with us at a certain rate. Thus, helping them we increase the chances of their genes to continue, and thus, we indirectly increase the chances of our own genes to continue themselves in those relatives. And given that the members in small primitive social groups used to be relatives, human individuals evolved to help and take care predominantly of that people who they closely know, and with whom they

[9] For the concept of the great gods as a means of forcing people to behave in complex societies, see, Ara Norenzayan, *Big Gods: How Religion Transformed Cooperation and Conflict,* Princeton University Press, 2013. Norenzayan seems to think that one of the reasons for the emergence of complex societies was that people began to believe in great gods. But in my view, the emergence of great god religions is a solution to the problem of the cooperation required for the survival of the complex societies that emerged as a result of human societies moving to sedentism and food production (agriculture and animal husbandry) for material reasons (hunter-gatherer societies reaching the carrying capacity of their ecosystem). Of course, religions are not just about this solution.

share their lives and maintain a close and friendly relationship. Reciprocal altruism is that individuals help each other in a mutual interest relationship. People increase their total benefits by helping each other alternately. But this mutual aid has to be based on a mutual trust relationship. So I have to know that the person I am going to help now will help me when the time comes. This is possible only by knowing that person and knowing what he usually does in similar situations. Therefore, mutual aid tends to occur among people who know each other face to face, intersect their lives and will do mutual work in the future. The groups founded on the principle of mutual aid have developed various mechanisms to punish people who receive help from others but do not give it in return. In small groups where everyone knows each other and people will live in the same social environment for life, it is much easier to ensure that this follow-up activity maintains the principles of mutual assistance than in large groups where people do not know each other. In these small communities people know each other, they live together, and they will hunt, make a shelter or gather fruit together in the future. Therefore, it is difficult to leave an aid free of charge. Because the person you owe is always there, he knows you, and tomorrow, you will need the help of that person again. But in large-scale societies, the situation is different. People don't know each other directly. They do not always deal with the same people. Solidarity in these societies is not exactly mutual. It is more like a chain reaction. An anonymous crowd, genetically foreign to each other, is constantly involved in a huge cooperation. Assistance without some extra precautions can turn into selfish utilitarianism in crowded groups. For this reason, in complex societies, much more sophisticated methods of socialization were developed to ensure solidarity among its members, and along with it, cohesion, stability and thus the continuity of the society. The most important of these were the great gods who make moral commandments.

Anthropologists warn us about reaching conclusions on ancient hunter-gatherer societies which existed prior to 12.000 years ago when there was no food production anywhere in the world, based on the observations made on recent modern-day hunter-gatherer peoples. Despite some important common characteristics, there are differences even among modern-day hunter-gatherer societies which have been observed by the anthropologists. They present considerable differences in group size, social complexity and cultural traits. Modern-day hunter-gatherers occupy marginal lands on Earth which are not claimed by complex settled societies, but they may have had relations with those societies which may have affected their cultural traits, social organization, daily activities, etc. A long period of time has passed since the advent of food production and the constitution of sedentary complex societies, and during this long time period, some differences may have occurred between ancient hunter-gatherer societies and modern-day hunter-gatherer societies due to reasons that we are not aware of now. With these caveats in mind, modern day hunter-gatherer communities offer us a glimpse into our past and it is possible to make plausible hypothesis about our hunter-gatherer past using the observations made on modern-day hunter-gatherer societies. Thus, anthropologist Marlowe, who has lived with the Hadza (a hunter-gatherer so-

ciety in Tanzania living around the shores of Lake Eyasi) makes these observations about their religious beliefs:

I think one can say that the Hadza do have a religion, certainly a cosmology anyway, but it bears little resemblance to what most of us in complex societies (with Christianity, Islam, Hinduism, etc.) think of as religion. There are no churches, preachers, leaders, or religious guardians, no idols or images of gods, no regular organized meetings, no religious morality, no belief in an afterlife — theirs is nothing like the major religions.[10]

We have similar observations on some other hunter-gatherer people. According to Norenzayan's quote from Marshall:

Among the San in the Kalahari, for example, 'Man's wrong-doing against man is not left to Gao! na's [the local god] punishment nor is it considered to be his concern. Man corrects or avenges such wrong-doings himself in his social context.'[11]

Unlike in small communities, the religious beliefs and gods of people living in complex societies are very closely interested in moral issues such as theft, lying, and non-compliance to agreements. Unlike the gods of complex societies, the gods of small groups cannot see everything and are not able to do everything. Because in order to ensure solidarity in small communities, there is no need for gods who can see everything and monitor whether people act, or even think, in accordance with moral norms. The behaviour of people who do not follow social rules in small groups is noticed by the members of the group. It seems that the gods who watch everything, who want to shape the behaviour of people according to certain moral principles, started to appear 10,000–8,000 years ago when people started to live in large communities, and this notion of god spread with the expansion of these large communities.

Therefore, in order to ensure stability and cohesion, realize solidarity and continue to live in large communities, members of these communities needed to follow extended and more intensified moral rules. The first way to set these moral rules and to see if they were followed was the belief in great gods. Great gods encourage sharing, solidarity and honesty. On the other hand, in complex societies, these values act as cement that anonymously bring together a large number of people who do not know each other. They help them to collaborate and to live together. With the discourse that those who belong to the same religion in the society are siblings, a sense of pseudo-kin and a general social solidarity are intended to be created among individuals who actually are foreign to each other. This was the first method developed by rulers of the complex societies who used the great gods to establish this social solidarity. Since people had to live in large crowds with persons that they did not know and had to cooperate with them, new complex moral norms were created and great gods began to watch at every

[10] Norenzayan A., (2013). *Big Gods: How Religion Transformed Cooperation and Conflict,* Princeton University Press, Chapter 7, quoting Marlowe, F. W. (2010). *The Hadza: Hunter-Gatherers of Tanzania,* Berkeley: University of California Press, p. 61.

[11] Norenzayan A., *ibid,* citing Marshall, L. (1962). !Kung bushman religious beliefs. *Journal of the International African Institute,* 32, pp. 221–252.

moment to check if people were following these norms. Believing in a great god, and following the rituals and procedures of social devotion brought about by it created the tools that hold large communities together. They made members of the society more connected, which in turn increased the stability and cohesion of the society.

With the development of technology, modern complex societies began to develop more effective methods than the great gods to socialize people and control their behaviour. The means and the capacity of detecting, finding, and punishing those who do not comply with the rules set by the society were greatly increased by the technological development. Modern, state sponsored compulsory education systems and mass communications media gave the rulers of the complex societies more effective means of propaganda in order to inculcate the fundamental values of the society. With the anonymization of the judicial and punitive institutions and their all-reaching power, the commonly shared belief that the judiciary is independent, that it will apply social norms in any case, and that its power will be sufficient for everyone, settled in the society. The belief in the existence of all-watching gods tended to decrease, as the trust in the secular institutions' power and will to implement the social norms in a neutral way in all situations increased. Instead of the teachings and moral stories of the great god religions, people started to be bombarded with leftist values by all sorts of communication and propaganda techniques; and instead of the invisible big gods, people started to believe in and trust more tangible secular institutions.[12]

The role played by the great gods and moral-based religions in ancient complex societies shows that complex societies, which include large number of people who do not know each other directly and have to make these people work in cooperation with each other, must control and guide their members' behaviour. And in order to achieve this control and guidance, certain ideological systems which represent society as one big family are necessary: Ideologies emphasizing solidarity, mutual trust and regulating human behaviour with complex moral principles. In modern industrial societies, in which the collective character of the society has increased even more, leftism is an ideology that has a similar function and it is actually related to those old great god religions (especially to Christianity, with its emphasis on non-violence and solidarity, to a certain extent).[13] Leftist values are the values of the techno-industrial system that emerged with the industrial revolution. The main function of these values is to increase the solidarity and cohesion in the society and remove the roughness between the gears of the social wheels.

[12] Modern Western Europe and especially Scandinavian countries are examples of this situation.

[13] Christianity and leftist ideologies have always had common ethical values. Social solidarity and sacrifice, a hatred of individual ambitions related to materialism, a suspicion that individuality will negatively affect the general well-being of society, equality (before God for Christianity and before law/the State for the left), and compassion for the weak and oppressed are the foundations of both Christianity and the left's value judgments. The adherents of these belief systems also tend to share similar psychological traits and inclinations: low self-esteem, inferiority feelings, guilt, etc.

Progress

One of the basic beliefs of the leftist world-view is progress. This belief or illusion implies that history flows in a certain direction, in accordance with a certain ideal over time. According to this belief, as people learn more about the universe, expand their general knowledge, apply this knowledge to technological development and dominate Nature using this technology, their societies are also evolving towards a more comfortable, more prosperous, more enlightened and more humane point as they eliminate misery and scarcity thanks to technological development. Thus, false beliefs and superstitions from the past disappear and an increasingly happier, free and prosperous human society emerges. In this process of development, human beings become more humanized by educating themselves and, by being civilized, they separate themselves from their animal roots. This belief, developed in detail by the Enlightenment philosophers of the 18th century[14] and shared by the intellectual classes of society, forms the basic pillar of the left's world-view. Without the concept of progress, the leftist world-view loses its meaning. The left's desperate hope for the future and pathological dissatisfaction for the present finds its expression in this concept. No matter how bad it is now, the future will be better. But some malevolent and reactionary forces prevent this development from happening. According to leftists, those who believe in progress should also struggle against the reactionary elements that try to prevent it, and they must open the way for this inevitable advance.

First wave leftism: The radical bourgeoisie

According to leftist progressives, what the development of science and technology leads to is the emergence of a more prosperous, egalitarian and free society over time, making life easier. But the wicked mislead this way. Historically, these villains have taken the form of kings, clergy, tsars, imperialists, capitalists, property owners, etc. Leftists have fought against them for the future utopian society. As advocates of the "happy" and "perfect" form of society created by the development of science and technology, leftists fight for the social values and institutions that this development will require. In the 18th century when it first appeared, the left was perceived as defending the values of the new order against the old order. In the beginning of the Enlightenment period and during the transition from agricultural communities to industrial societies, the left, as the defender of the principle of progress and the new order against the old order, advocated equality, reason and freedom by coming against family, authority and religion. These were the values of the emerging industrial society. As industrial society

[14] According to Bury, the idea of constant, quasi automatic progress with time, incorporating social development and refining of the human character too, fully developed during the Enlightenment in the 18th century. For the evolution of the idea of progress see J. B. Bury, The Idea of *Progress: An Inquiry into its Origin and Growth,* Macmillan and Co., Limited, London, 1920.

required the integration of science with technology, the guiding role of religion and the beliefs emanating from it had to be rejected. The basic production unit of the society was not the family any more, but it was becoming the larger scale organized factory. Production was taking on a more collective structure that required the gathering of many people who did not know each other. The peasants flowed into the cities to work in factories, becoming workers, and this required the destruction of the old, inelastic, unequal, caste and discriminatory structure of the society. For this reason, the power of the extended family had to be broken in favour of the social collective.

People had to be attached to the social system itself, above all the particular classes or social subgroups. So they became citizens with "equal rights." Since what the system needs is the technical skills and abilities of people, they had to be evaluated according to their abilities, regardless of any other privileges. For this reason, people had to be "equal." Real equality, i.e., the elimination or overlooking of all the differences, is impossible. Because everybody is different by nature or the circumstances. Therefore, what leftists did as defenders of the "equality" was much more nuanced in the real life than a basic defence of a general, fundamental idea of "equality." As advocates of "equality," bourgeois leftists were focusing at that time on the elimination of nobility and clergy privileges, the old order's rigid social structure which prevented the efficient use of the talents of some people. When the allocation of the positions of power, wealth, benefits and commodities a society has to offer is done according to some hereditary privileges, this results in an inefficient sharing of the roles in society and blocks the desired people who has the talents to assume the adequate positions suitable to their capacities. Thus, by advocating "equality," they were trying to break the aristocracy's and clergy's grip on the society, thereby assuming the leadership role and also opening the way for the talented people to the high positions and thus increasing the society's overall efficiency.[15]

A very similar thing happened with another cherished idea of the left, "freedom." Left, in all its variants and since its early origins, never regarded freedom as the ability to take one's own life conditions, one's life-and-death issues, into his own hands autonomously, but defined it in various quite different (even incompatible) fashions according to the different circumstances and to the different needs of the moment.[16] During the Enlightenment era and at the birth of the industrial societies, first wave left defined freedom as to be exempt from the old society's restrictions, privileges, and pre-arranged roles based on the heredity, class, age, etc. The consequence of this def-

[15] As we will see below, the second wave leftists, the socialists, would act in defence of "equality" too. This time they would be struggling against the too gross differences in the distribution of wealth in order to prevent the social problems which would have created disturbances in the functioning of the system. Thus, left's historic struggles for "equality" helped the system to function more efficiently.

[16] In fact leftism sees, as the freedom's initial condition, to be exempt from this process of life and death struggle. According to leftist view, freedom can only start with civilization's domination over Nature and inside the complex human society. Because only then, according to leftism, an individual will be able to develop the civilized qualities that will make freedom possible.

inition of freedom in the economic field was to regard the citizen as a free economic agent. This in turn legitimized the destruction of the serfdom and the old guild system. These rigid old production systems were inhibiting the economic activity, hindering the progress of technical advancements: serfdom was an obstacle in front of the creation of urban proletariat which will work in modern factories; and guild system was blocking the application of new production methods with its constraining rules. The shattering of these old economic relations increased the dynamism of economic activity, freed the serfs from the forced labour relations and opened the way to the creation of the working class of the industrial societies, and the implementation of the new technological developments to the production. Material abundance was closely connected to the freedom of enterprise and trade. In order for these two to flourish, it was necessary that people consumed more, and thus it was necessary that they were free consumers.[17].

First wave leftists also emphasized the freedom as related to the faith. Because the newly formed industrial society was relying on the scientific method in order to conduct/develop its activities and the scientific method was much more efficient in solving technological immediate problems,[18] creating new powerful means which were being implemented in all sorts of domains from production to transportation, to communication. And thus scientific method brought with it the end of the hegemony of the religious world-view. Religion had to be relegated and confined to the individual's own private life. This confinement of religion also cleared the political and public life from the religious strife that exhausted society's energy for long centuries.

In short, the changing structure of the society due to the industrial revolution required adopting "equality" and "freedom", and solidarity with the whole social system, rejecting superstition and accepting the guidance of science as social values, and the left played a leading role in the conceptualization and acceptance of these values in that period.

Ideas that were advocated initially by the bourgeois left, and later by the socialist leftists as well (the elimination of class-based privileges in society, the equal acceptance of people before the law, etc.), became dominant values in North America and Western Europe and settled as legal institutions as of the half of the 19th century. Monarchies and other inherited power positions (upper legislative chambers or judicial courts with hereditary memberships) were mostly reduced to symbolic entities. With the equality

[17] But of course the real implications of this consumerist freedom showed themselves later, when technology greatly increased the production capacity and flooded the society with all sorts of goods, commodities, services and gadgets.

[18] Scientific methods are effective in solving immediate, short term effects of technological problems but the new methods and technologies implemented to solve these problems generally produce even greater problems in the middle and the long term. For example, petrochemistry was an effective method for devising cheap, new, easily shaped numerous materials; but today, plastics are a big problem of pollution and a grave danger to health due to the endocrine disruptive effects of microplastics and toxic chemicals which are leaching out from plastics. Nearly all living beings in the world today have these toxic chemicals in their bodies. Chemists who created these techniques in the last century couldn't have imagined that plastics would have those enormous side effects.

before law, the abolition of the privileges, the disappearance of small communities (such as artisans' guilds, large families and tribal groups) in the society, the individual was left alone and isolated in front of the large social collective. All these developments left only the states as the hegemonic organised entities, representing the collective power of the whole society. The advancements in transportation and communication facilities, which went in tandem with the development of technology, provided the state with the opportunity to enforce its laws more broadly and to better monitor and control its citizens. It tracked its citizens' incomes and expenses, recorded them since their birth, and recruited them as soldiers. The concepts of the modern system of near-universal national conscription, compulsory education, and the rights and duties of citizens to the state and of the state to the citizens emerged. Under these circumstances, freedom just meant doing what the social collective allowed.

Second wave leftism: The socialist left

In Western Europe as of the mid-19th century, the values that only leftist progressives advocated previously (equality before the law, freedom of religion and secularism, abolition of slavery, representative democracy) have been accepted by almost every segment of the political spectrum.[19] Once the values of the first wave left were settled in the society and became the basic values adopted by virtually every segment of the social system, the socialist left came into play. Socialist left started to take as its target the social security and the economic equality of the masses. The goal of the socialist left became to demolish the market order that had left people in precarious living conditions, and to establish a new social order in which material abundance would be achieved, and thus "real" equality and freedom, in the sense defined by the socialist left, would be established. According to the socialist left, equality couldn't be defined only as limited to equality before the law and the abolition of the hereditary privileges. Society ought to ensure that everybody should have equality also in terms of material abundance. Every citizen should have as a basic right to enjoy the material commodities and services produced by the industrial revolution's new technological advancements. And this notion of "equality" is closely related to the notion of "freedom" as understood by the socialist left. According to this view, only beyond a certain threshold of material abundance a person can be "free." Otherwise he would be forced only to struggle to satisfy his physical needs and wouldn't have the opportunities to cultivate the civilized capacities that, according to leftists, would make him "free." He

[19] To a great extent this also had happened in North America. There was an agricultural regime in the south of the United States which was still using slave labour, but it was becoming more and more of an archaic structure with the advent of the industrial mode of production; and finally, the use of slave labour was abolished during the second half of the 19th century there. In other respects (freedom of religion and secularism, freedom of expression, equality before the law for the citizens, representative democracy, etc.) the United States had already been founded on the principles of first wave left by people who deeply internalized those values or even contributed to the formation of them.

wouldn't be able to cultivate artistic capacities and enjoy or produce artistic works for example. Or wouldn't be able to immerse in political activities or enjoy the freedom of expressing himself or wouldn't have the ability to follow his fellow citizens' ideas. Thus, according to socialism, in order to "real" equality and freedom to be possible, a certain material abundance should be ensured by the society for everybody.

Since traditional small communities, where people found the possibilities of interpersonal solidarity, had been dispersed, the individual was left alone in the crowd. For this reason, the view that the large-scale society should protect the individual had started to be dominant in the society and the left had played a leading role in defending this view and making arrangements for it. Individuals, isolated in the crowd, could no longer trust and turn to each other, to their closest relatives or friends, in order to assure their subsistence, but to mechanisms such as insurance and retirement provided by the system. So solidarity was collectivized. In fact, the isolation of the individual vis-a-vis the large social collective was a deficiency resulting from the breaking of the old bonds, which then was seen to be compensated for. The masses, which had been pushed into an atmosphere of great uncertainty and insecurity, were thus secured by and integrated into the system. Social life was thus protected from the environment of turmoil caused by this uncertainty and precariousness.

In Europe and North America, the historical role that the socialist left performed since the half of the nineteenth century was to adapt the social segments formed by the new production methods that emerged with the industrial revolution (the working class) to the social structure, as a perfectly functioning component of the system. With the industrial revolution, a new form of production relations emerged as the old social structures formed around agriculture disappeared and the masses flowed to the big cities as industrial workers. But this newly formed class lacked the old forms of social solidarity that provided social protection and stability for the individuals. The peasantry made it possible for people to rely on their own labour and power in terms of the production of nutrients that were essential for their physical survival. The peasants were not completely connected to the larger social system outside their communities and were able to meet their basic needs with their own strength to a certain extent. The villagers, leaving the subsistence economy of their villages flooded to the cities as workers and became completely dependent on the system for their physical needs. They needed food products, housing, clothes, shoes, etc. produced by others to survive. This meant that if they could not find a job, it directly resulted in hunger and misery. Technological developments were the main reason for the villagers to flock to the cities as workers. Mechanization in agriculture reduced the amount of people needed for agricultural labour. The fact that these people went to the cities as workers was breaking the fabric of the old society and created a mass that was constantly standing on the edge of society and prone to defy the rules and threaten the established order. Mechanisms were needed to keep the cohesion of this newly formed social structure, because the precarious life of these newly emerging working classes at the beginning of the industrial revolution made the system inefficient and posed a great threat to it.

Socialists of the Western European left made the system more efficient by making institutional arrangements to integrate the newly formed working classes into the system as a result of their struggle based on the principle of eliminating capitalism. The welfare state, and the practices that redistributed the wealth through the society which emerged thanks to their struggle, strengthened the system by instituting the social peace and creating an increased demand for consumer goods. They basically relied on two tools in adopting these reforms, which allowed the system to correct itself. The first of these was the wage-working masses, which formed socialism's own bases and were brought about by the industrial revolution. These working classes, organized in trade unions, created a pressure group in the first years, and ensured reforms when the socialist leftists could not take over the government. The second tool used by the left was the state organization itself. To the extent that socialist leftists grew in number and captured the state apparatus, they made these reforms themselves, using its law-making power.

The same institutional arrangements were also implemented in the United States with the pressure of the Great Depression. There were also in the United States leftist parties (socialist and communist) and workers' organizations, and these were especially active until the Second World War. And there was also a progressive movement which had very similar social views to the social-democratic European left. They were defending similar ideas, values, and judicial and institutional reforms to those defended by European second wave leftists. But they weren't very effective instituting a welfare state until the Great Depression of the 1930s because of the special characteristics of the United States. In the United States, compared to Western Europe, people and local communities had relatively better material conditions compared to European masses thanks to the country's vast expanse and its rich and unexploited natural resources; and thus people had more independence vis-a-vis the central state. These conditions created individualistic tendencies and ideas which gave importance to self-reliance, local independence, etc. And American society (in its initial establishment) was greatly composed by immigrants escaping from their governments; this situation created an atmosphere of suspicion with respect to central state structures and their intervention in local autonomy. But all this changed with the rapid industrialization of the United States after the second half of the 19^{th} century. This industrialization created a mass of urban working class people who had no material securities (just like the working masses in Europe) and were totally dependent on large organizations for their sustenance. The Great Depression unequivocally made evident the dangers these precarious conditions of the masses posed to the system. Thus, the necessity of the arrangements advocated by the American left became apparent. New Deal reforms (which, among other things, included also the social security measures of welfare state practices: pension rights, minimum wage, work-hour limitations, social security schemes, legalization of trade union rights, etc.) institutionalized the collective insurance mechanisms for the masses who had no material securities apart from their salaried jobs. By ensuring the state's intervention in the economy in order to accelerate the economic activity and increase

the consumption capacities of the masses with the new social reforms, progressive New Deal reforms helped the United States surmount the Great Depression and stabilize the techno-industrial system there.

A highly collectivist mass society

Since the late nineteenth century through the first part of the twentieth century when these reforms have been carried out, basically no difference remained between the policies proposed by the socialist leftists and the rest of the political groups of society. Because what had to be done basically to ensure social cohesion and stability had become a reality accepted by all wings of the political spectrum. In other words, the struggle of the second wave leftists to supersede the system ended up showing it where its own interests were. Practical reforms such as the expansion of democracy (recognition of the general right to vote, removal of the powers of monarchist residues or reduction of them to a mere symbolic status), the establishment of the welfare state, and the regulation of the working day and conditions by law, became policies advocated by almost every segment of the political spectrum and thus were performed. Because, the necessity for the establishment of a mass society and the value of democracy emanating from this necessity created a situation in which no one could advocate keeping the crowded working class on the borders of society any more. These masses of workers had to be integrated into the system. Reform policies were adopted by all political segments. The universal suffrage made the state more sensitive to reform demands, regardless of who was in power, and it became the engine for the realization of reform demands. These reforms also strengthened the technoindustrial society, allowing it to fully settle. Leftists' efficiency in reforming the system rendered their ultimate goals of overcoming capitalism meaningless in advanced industrial parts of the world (Western Europe and North America).[20] Thanks to these reforms, to the enormous increase of the production capacity through the technological developments, and to the redistribution of this wealth through the welfare state practices, the system was transformed, and the material prosperity, which the socialist leftists originally believed to be possible only under a socialist economy, became a reality in capitalist economies too.

[20] In Tsarist Russia, a very narrow clique conquered the administration of the society by the combination of very special conditions (World War I; the land demands of the peasants, who make up the majority of the society; a non-inclusive and rigid political structure that cannot integrate workers and peasants into society; etc.) and they called it a socialist revolution. They wanted to manage the economy in a planned manner, by ending the market's impact. This experience, an economic system that is managed by a single actor (the state) and based on a central plan, proved to be less successful than the capitalist economic system (which is not a drawn and defined economic system with precise boundaries; in the most general sense, "capitalism" means that the economy is not managed by a single actor, from a single center).

The societies that emerged together with the industrial system were mass societies with collective needs, and the best way to ensure stability in these societies was to give these masses the appearance of participating in the management of these societies through the institutional arrangements called democracy. To the extent that the functioning of the society required a very crowded mass of people, who became more and more tied to each other to work together, the creation of a feeling that they were also involved in the administration became a necessity. This highly collectivistic character acquired by the society made it necessary to develop modern, anti- individualistic values and ideologies. Along with parliaments and executive organs formed by elected members, employers' organizations and trade unions and various non-governmental organizations constituted the cooperation and solidarity mechanisms of the new mass society. The establishment of the multicultural ideology that made it possible for different segments (religious, ethnic, etc.) of society to participate in the social activity was also due to this need. A new solidarity-based social order was built after the Second World War across the industrialized countries of the world. This order of social solidarity was a social necessity during a period when the system needed the power of human labour intensely.

After the Second World War, universal voting right (including women), right to referendum, independent judiciary, separation of religion and state affairs, parliamentary control over foreign policy, freedom of association and opinion, elimination of discriminatory laws against women, free health services, free education, gradual income tax and property tax, regulation of working days and conditions, labour insurance, pension rights, etc. were largely realized in the industrialized countries of the Western Europe and North America. At the end of the war, socialist or social-democratic parties were in power in most Western European countries. However, they were no longer outside the system and trying to overthrow it (in the sense of establishing a different economic and political order), but instead, they aimed to manage the system and tried to prove their talent as managers to the masses and other established institutions. The establishment of universal suffrage entailed the mainstreaming of political parties. Under these circumstances, the parties were in a state to become either mainstream or marginalized. Of course, leftism had been already focused on the improvement and development of the techno-industrial system from the very beginning. However, in the post-war years, the socialist and communist parties completely abandoned even the goal of transforming the economic system in a revolutionary way (seizing the administration in a violent manner and changing the economic system through forced methods)[21]. Their main goal now was to enable the existing social system to evolve to a fairer point and to make

[21] After the student upheavals of 1968 subsided, a very small number of people who were active in student and youth movements had recourse to terrorist acts during the 1970s. Their aim was (if these terrorist acts weren't a mere reaction to their psychology of powerlessness and they ever rationally position these acts on a strategic plan) to disrupt the established harmony of the society and open again a way to violent confrontation in order to supersede the capitalism violently as in the 1917 Bolshevik version. But their recourse to physical violence was a suicide for them. They could neither

extreme inequalities disappear. And to grant everyone basic social rights such as the rights to work, to a minimum wage, to health and to education. These were precisely the developments that reduced tensions within the system. Improving socio-economic conditions and increasing equality in this sense could only be achieved under stable economic growth and the material welfare provided by it. Since the technological development was the most important factor that would increase these welfare conditions and material abundance, the suitable conditions for the technological development should be met also. In sum: They strove for a social system which reduced its internal tensions and could allocate the necessary resources to scientific and technological research.

The result was a society where people's purchasing power increased, where they could choose ever more commodities from the most varied products offered to them, and where they tried desperately, but unsuccessfully, to make their lives meaningful with this consumption. Since the system's collectivistic pressure and control was by then so huge on its members and prevented them living according with their natural tendencies, an exhaust valve was necessary to ease the accumulated pressures. This role started to be played in this easy, materially abundant "consumer society" by the offers of different entertainments, hobbies, commodities and services. But in this "brave new world," the initiatives were completely taken away from people's lives, and individuals were diluted in a huge collective shaped by the ideology of equality. A large social organization that functioned like a machine, and a mass of isolated people confined to roles defined by the social system. The necessities for their survival were provided to them by the social system without a physically and intellectually stimulating effort directly related to these needs on their part, on the condition that they remained a functioning cog in the social machine. By obeying the roles given to them by the system, they could guarantee their own existence and choose from the consumption options offered to them.

But such an existence took away from the people the ability to satisfy a biologically based human need: The power process. As defined by Kaczynski in *Industrial Society and Its Future,* "the power process" signifies the natural human need to conduct activities more or less autonomously using one's physical and intellectual capabilities. By going adequately through this power process, people can satisfy themselves and be content with themselves and their lives. The satisfaction of the need to go through the power process is directly proportional to the importance that the goals pursued have for one, to the effort needed to achieve them, to the degree of success in achieving them and to the autonomy one has in pursuing them. In short, people need to have important goals and need to reach successfully to some of these goals using their own capabilities autonomously. So, given that the physical and psychological necessities which keep us alive and improve our reproductive fitness are usually the most important things for us, satisfying these needs through our own effort and on our own initiative is the ideal

get any support from the masses whom they claim to represent and bolster into action nor push other mainstream parties to more radical positions.

way of going through the power process. But generally, the prevailing living conditions in the technoindustrial system don't allow many people to achieve some important goals no matter how much effort they make. Or they allow people to achieve some other important goals with too little effort. Or, in many other cases, the goals that the system lets people to pursue with some effort are not important enough to adequately satisfy the power process. Or it doesn't allow them to pursue their goals autonomously enough. In any of these cases, the need to go through the power process is not properly satisfied or not satisfied at all. The destruction of the possibilities to live healthily the power process creates psychological problems in people (depression, feelings of inferiority, eating and sleeping disorders, etc.) These problems are tried to be avoided or compensated with surrogate activities which serve as incomplete replacements for the life- and-death activities of the natural power process. But these surrogate activities (hobbies, entertainments, pastimes, etc.) usually aren't effective enough to completely satisfy the need to go through the power process. Neither usually are satisfactory the rest of activities that people have to realize in the techno-industrial system, like their jobs. Often, these activities are not actually important enough for those who carry them out, they are too easily carried out, or they don't allow enough autonomy those who realize them. In the techno-industrial society, the necessities of the physical existence are frequently offered to the members of this society without the need of a serious exertion on their part. Even in the case of heavy and physically demanding surrogate activities or jobs, the nature of most of these activities is such that they don't satisfy adequately people's need of engaging in stimulating activities. Usually, jobs don't challenge the workers' capabilities and don't allow their autonomy. Too often, people perform their duties as mere automatons in the great machine of the economic activity. Even if some people are able to pursue and attain some important goals through a relatively interesting and intense effortdemanding job, the lack of autonomy too often greatly hinders the efficiency of those activities as ways to go properly enough through the power process. But generally, the goals that the system lets people to pursue in their jobs are not even important enough to adequately satisfy the power process.

After the Second World War, consumption became one of the principal activities that have been used to compensate the lack of opportunities of adequately going through the power process. Because, after the Second World War, technological development reached to a point where it was possible to continuously flood the society with all sorts of commodities, gadgets and services. Thus, people had become addicted to more consumption, and their commitment to consumption made them more in need of the system, and further strengthened it. The only power left to people was virtually the power to choose what they wanted to consume. What this society called freedom consisted mainly of being able to "freely" choose the consumption possibilities offered by the system. This consumption mechanism built by Western societies created the best environment in which the techno-industrial system could develop, because it made possible to partly ease the psychological unrest produced by the impossibility of going adequately through the power process. The system also used consumption possibilities

as a carrot and stick for the voluntary participation in the social system without the need for deliberate forcing. The masses that were taken away from the power process could to a certain extent ease their psychological discomfort with the "free" lifestyle offered by the consumer society, and this feeling of false satisfaction made them voluntarily spin the waterwheel of the system. This is exactly the point where the socialist systems failed. Because they could not build a consumer society, they could not get the approval of the people, and the masses could not be ensured to join the wheels of the system on their own accord. Forcing people to do something has always had worse results than making them do it willingly. Socialist systems were not able to ensure the voluntary participation of their masses as strongly as western societies; despite coercive interventions to control people's daily lives, thoughts and behaviour, socialist countries could not control their members as deeply as Western societies did it without using physical pressure from above.

The success of capitalism in raising social welfare had refuted the old socialist thesis that capitalism would never ensure the welfare of the masses and that working classes would become poorer in this economic system. In practice, Western European socialist parties began to abandon socialism as the goal to be achieved. It turned out that the complete abolition of private property was not essential to social equality, prosperity and happiness, which were the ultimate socialist goals and reasons to abolish private property. Moreover, the transformation of private property, the gradual transformation of companies into joint-stock companies, and their transformation into organizations owned by shareholders and managed by bureaucracies, not by individual bosses, made socialist conceptions of statism and of the economy governed by the state meaningless. Production methods used in factories were imposed by technological development, and nationalization would not change them qualitatively. Technology had an independent determinism beyond ideologies. Thus, socialist left parties, abandoning the Marxist class war and the overcoming of capitalism through the abolition of private property, focused on the acceptance and implementation of the ethical values emanating from Christianity and humanism (the protection of the oppressed, affirmative action, furthering of the social equality through the welfare state, increasing the social cooperation and emphasizing the individual's duties to the society and society's duties to the individual and their complete amalgamation) in the framework of the current economic order. Because it turned out that the development of capitalism would not necessarily result in increased inequality. Capitalism could be directed by state intervention to achieve the desired results. A high-wage capitalism, where equality of opportunity was ensured and the relentless race pursuing property was controlled by the state, which guaranteed the consumption of the masses, would enable a society with leftist values and goals thanks to the abundance created by the technological development. The way to achieve them depended on achieving economic growth through social stability and technological development.

Although socialist leftists had came out of the classical framework of what their theory said about the capitalist system, they continued to believe in progress. As I

have already mentioned above, the concept of progress forms the basis of leftism, and without faith in the concept of progress, there is no leftism. According to this new leftist understanding, progress was also possible within the framework of capitalism, and over time, this would be approached towards the desired society, as progress took place. In sum, the European socialist leftists' persuasion that capitalism will create wealth led them to focus on sharing the wealth capitalism produces rather than on destroying capitalism.[22]

In the middle of the 20th century, there emerged a belief that ideologies had disappeared. In fact, this was a feeling resulting from the dominance of techno-industrial civilization and its values. A social system where society would function like a perfect machine thanks to the developments that would be brought about by the blend of science and technology, in which people would live in a greater material abundance and could choose the products they wanted from the varied consumption goods, could be the only ideal that humanity would pursue regardless of economic systems. The idea of progress of the radical philosophers of the Enlightenment had become the main motto of all societies, from China to America.

The third wave leftism

As the old issues (the elimination of misery and brutal exploitation, the regulation of working time and conditions, the right to education, universal suffrage, etc.) were gradually resolved, leftists started now focusing on other issues.[23] Leaving aside its

[22] The first Marxists did not believe that capitalism could grow forever. This was one fundamental aspect of their criticism of capitalism. According to this view, capitalism was an obstacle to growth due to its internal contradictions, because it undermined technological development, preventing society from taking full advantage of it, and capitalism would eventually collapse because of the growth of these contradictions. Compare this with the fact that one of the main complaints of today's leftists towards capitalism is its unlimited growth tendency. Of course, in order for this complaint to emerge, today's understanding that the activities of the techno-industrial system are causing disturbances in the biosphere that threaten the very existence of this system, should also emerge. Current left's "green" opposition regarding the unsustainability is helping the system to correct itself in this area as well.

[23] The fact that the values that once were advocated only by the left and the people who were deemed radicals in the society gradually have became the mainstream values of this very society over time shows us the mechanism of the change of social values in the past two hundred years. The people who first seem radical begin to advocate the adoption of values that will be necessary for the realization of the social consequences of technological development, over time these become the values that a larger minority advocates and the left creates an atmosphere favourable to them by developing the methods of applying them and convincing the masses of the "goodness" and "fairness" of these values. These values eventually turn into an agenda that everybody who wants to manage society feels pressure to assume, promote and apply and thus the society flows towards a point where it can adapt better to the changes brought by technology. One of the concrete examples of this is the adoption of the concept of democracy (the abolition of the power of the monarchy, parliamentarism and the debate revolving around universal suffrage) as a value accepted by all segments of society. Democracy at the end of the eighteenth century and at the beginning of the nineteenth century was not a value advocated by all political segments.

project of changing or reforming the economic system, the left, starting in the sixties, began to address the issue of identities (gays, women, all sorts of minority groups, animals, etc.) and their oppression. So the main goal of the left from then on started to become the increasing of social "equality" (in the sense that different identities and minority groups deserve equal conditions). The scope of this goal, which was defined by the first wave left as the equality before law and later by the second wave left as the equal prosperous socio-economic conditions for every segment of the society, expanded over the years. This greatly entailed enlarging the categories of the oppressed. "Oppressed" was no more a mere category of low socio-economic status. The widening of the scope of the "oppressed" led the left to directly meddle in the people's private lives, beliefs and behaviour. In fact, it can be said that the project that the left put forward after these years was a project that went much deeper, penetrated the capillaries of the society, and tried to regulate everything from people's thoughts to everyday behaviour. Citizenship rights; social rights of minorities; personal freedoms; women rights; animal rights; the normalization of those sexual tendencies that the traditional society had seen as heresy until that time; the abolition of abortion bans; the loosening of the traditional values and the removal of censorship in cultural products such as movies, books, music, etc.[24] in short, nearly every aspect of everyday life was politicized and began to fall under the regulation of the leftist ethics.

Two major strikes occurred across Western Europe, through the sixties. While these waves of strikes reintroduced the hope that the capitalist system could be overcome by some Bolshevik methods to some marginal leftist groups,[25] it was actually an indication of how much the working masses had been pacified by the carrots and sticks of the system and how they wanted to take advantage of the system more than eliminating it or just demonstrating their hostility to it. These strikes and the way they were terminated (through the channels of dialogue between different segments of society, like the unions used to negotiate with the political establishment) were an expression of the success achieved in integrating large masses into the system. The workers' expectations for these strikes consisted from the beginning of just making some material gains.

Along with these strikes in the sixties, also occurred some revolts that began almost simultaneously around the world, known as the student and youth movement. The emergence of students and youth as a political force became a possibility, throughout the twentieth century, with the spread of higher education, the increase in the number of students in the society, and the subsequent stretching of the period between adoles-

---

Democracy was a controversial concept advocated only by the leftist radicals. But by the middle of the 20th century, at least in North America and most European countries, it had become a value that every segment of the political spectrum advocated and everyone accused each other of being not democratic enough. And since then, this democratic mindset has only expanded throughout the world. In other words, leftist values became increasingly the mainstream values of modern society.

[24] But of course, their pathological insistence on political correctness has created an equal if not more deep and intense censorship.

[25] See footnote 21.

cence and adulthood. And the global character of this youth movement, which started to appear on the whole world more or less at the same time, was made possible by the mass society created by technological development. With the development of communication tools, students in Europe were able to instantly learn about the demands and challenges of students in America. They all read the same books, watched the same movies and listened to the same music. The development of the education system and the welfare society led to the dissemination of ideas and cultural and material possibilities, which previously were once accessible only to small minorities, throughout large masses of students by means of educational and cultural opportunities. The economic welfare situation of the sixties caused these students to have confidence in their material conditions, so they could deal with more general issues. They started to have some grandiose ideas about their importance, that their life should be more than mere working and having a family. Since they thought they became so "cultivated" by graduating from a university and consuming the cultural commodities of the techno-industrial society, they felt that they need to have importance and a big impact on society. But as the number of diplomas increased, their relative value was depreciating enormously compared to previous years. Society wasn't able to offer high career positions to every university graduate. In parallel to that, possibilities of going through the power process greatly diminished in those years and this fact was creating psychological problems and dissatisfaction in many people. They were living these seemingly contradictory feelings simultaneously. On the one hand, there were feelings of inferiority and powerlessness due to the impossibility of going through the power process and the abyss between their expectations and what society had to offer. And on the other hand, there were feelings of self-importance and of themselves being out of ordinary due to their "high" education and "qualifications." This sense of being over-qualified for the roles society offered to them was increasing the acuteness of the feelings of inferiority and powerlessness they had. But they attributed the roots of these feelings to wrong causes: capitalism, commodification, lack of political power. This youth movement was actually an expression of the problems of the techno-industrial society, rather than being a movement contrary to such society which advocated values against it; what this movement wanted was just to take advantage of this society's "blessings" without being exposed to its restrictions and its inevitable negative consequences.

The values of the student and youth movement born in the sixties were as follows: rejection of traditional values from the past (values related to the traditional family and sexuality, etc.), opposition to discipline and hierarchy, contempt for work, a hedonism that emphasizes the moment, continuous entertainment against boredom, sexual freedom, LGBT rights, full integration of women in modern society, opposition to traditional male roles, rejection of violence, objection to what they called the strict norms of the scientific method, the belief that there is no single, permanent and precise truth

and objectivity -also called relativism-,[26] etc. There are two main reasons why these values exploded with the student and youth movement in the sixties:

— The first is the complete elimination of traditional agricultural societies by the technoindustrial system in Western Europe and North America, and therefore the utter replacement of the residual value leftovers from the previous form of society with new values, by this time. The autonomy of small scale communities (like families or village/town local communities) had been utterly destroyed by then, and people were completely connected to the techno-industrial system rather than to small scale traditional communities.

— The second is the psychological disturbances and unnatural behavioural tendencies created by the lifestyle of techno-industrial system because, by this time, it had become impossible in the industrialized countries of the world to adequately go through the power process.

To give a concrete example of the first reason: The completion of the elimination of the traditional agricultural societies in Western Europe and North America meant also the culmination of the full integration of women to techno-industrial system. This process began during the industrial revolution with the economic integration of women to the industrial system and was more or less completed during the last half of the 20^{th} century at political and intellectual levels too. Disintegration of the subsistence home economies eliminated the traditional economic role of women and children in the pre-industrial family. Women, beginning from the 19^{th} century, started to join ever more domains of industrial system's functions, and children needed to go through an ever longer process of education in order to get a job in this system. These changes brought deep alterations to the traditional family structures and the roles individuals assumed in those structures. For example, the fact that children needed to spend ever longer times for education in order to get a job increased the cost of raising children, so families started to have fewer children,[27] and this was one factor in the relaxation of

[26] After the position of religion as the dominant ideology in society was destroyed in Western societies, some of the leftists who had the most intense inferiority feelings began to criticize science, which they saw as the dominant ideology, because science, according to them, established certain categories, and this could mean that some people and cultures were inferior and bad. These criticisms started to appear too in most leftist environments in developing countries, such as Turkey, but there still prevailed the old leftist mentality that science breaks down superstitions and enlighten people and thus plays a dominant role in the creation of a prosperous and happier society.

[27] In traditional subsistence home economies, children assumed economically beneficial roles (like herding or milking livestock animals, sowing fields, helping in household chores, etc.) from a very young age. In modern industrial societies, these roles of children have been totally eliminated, and besides new costs have had to be assumed by their parents. They need to go through a long education process until a very late age and the investments (school fees, clothes, school equipment, textbooks, and now electronic gadgets they need or want, etc.) made on them during this process are very high and getting higher. Thus, they contribute nothing to family economy; on the contrary, they are a big financial liability on it. For this reason — among others, like because now they are able to control reproduction with modern contraception methods — people are having less and less children in modern industrial societies.

the family ties. Third wave leftists' rejection of traditional family roles and sexuality was the reflection of these changes on the societal tendencies.

Related to the second reason: The complexity of the society in terms of the development of technology and the fact that people became small gears of a large collective eliminated the possibilities of going adequately through the power process. People had become entirely connected to the social machine for their physical existence, and many had become more lazy and insecure, and they feel inferior, as they did not have the means to use autonomously their own abilities and powers to carry out life-and-death tasks. They did not want to accept competition because they did not trust themselves. They despised the family structure because they wanted to enjoy the pleasures of a sexual life without the responsibility of the family. They wanted to enjoy all the pleasures and tastes, living the present, without thoughts about the future. They wanted all kinds of hierarchies to disappear for they did not trust themselves, because they were sure that they would be low down in the hierarchy due to the inferiority they felt. They refused things that demanded endurance, work and perseverance because they felt that they do not have the ability to do them. After the Second World War, the society established in Western Europe and North America has been able to gradually present to their members very easy, comfortable life conditions. Material restrictions have been greatly abolished; working conditions ameliorated; living quarters, with all the air conditioning/heating and ergonomic technologies have become totally regulated and manipulated for the human convenience.[28] The society has been taking care of the needs of their members with only a minimum exertion on their parts. This lifestyle eliminates the goals that are really important through the elimination of the necessity to exert oneself to achieve them. The result of this situation is boredom. And many have tried to alleviate boredom with pleasure and immersing themselves in hedonism. For this reason, the philosophy of living the moment is very pleasing to the masses trapped in this kind of life. To live the moment, to give oneself to physical pleasures, to go beyond the hierarchies is in fact well suited to the understanding of life offered by the consumer society. They represent a countermeasure paradise against the meaningless and dissatisfaction laden, boring modern everyday life.

During the sixties, leftist thinkers who were pursuing to attract young people and to express their feelings were developing a theory that criticized everyday life beyond economic misery. The concept that came to the fore was alienation. With this notion they were criticizing the fact that human relations became commodity relationships, i.e., the regulation of an entire life, including work and leisure, was being conducted in the framework of the exchange of products and services, and thus life was being

[28] There has been a considerable progress in the regulation of the immediate environment for the human convenience (control of heat, ergonomic design of everyday objects, delegating the tasks that require physical effort to machines, etc.) But this doesn't change the fact that humans are living in artificial environments which are not suitable to their natural tendencies (and crowding, traffic, air pollution, noise, lack of open natural landscapes, etc. continue to be problems too). These regulations are actually the palliatives for the fact that humans have to live away from their natural habitats.

reduced to technically designed periods of time to expand the production of commodities. But, paradoxically, they found the way to get rid of this cycle in the further advancement of technology and the disappearance of the concept of work. Because, despite criticizing the lifestyle brought about by the technological society, they didn't see the real reasons and causes that had made this lifestyle a reality. They only saw the problem in capitalism and the fact that this lifestyle demands money in order to offer its commodities. These leftist theorists and their followers in the youth movement had internalized the values of the technoindustrial society. They wanted to live the hedonist lifestyle offered by the consumer society without the necessity of earning and spending money and without the boredom and meaninglessness this lifestyle implied. So they saw the solution in the abolition of capitalism and money relations. Thus, they saw the final emancipation in an endless fun where people would be freed totally from work, hardships and struggles. The lifestyle they suggested consisted of the consumption society they criticized, free from its "bad" aspects (work, responsibility, family, hierarchies, traditional moral norms, etc.) and taken to its ultimate logical consequences.

The student and youth movement of the sixties caused the birth of an extreme identification with feminism, environmentalism and "the oppressed" (women, as well as the races different from the white race, people with beliefs different from Christianity, people with different sexual orientations, animals, and so on), and so the foundations of today's leftist movement (third wave left as I have called them) were laid. The third wave left, which owes its ideological origins to the Frankfurt School, post-modernism, structuralism, existentialism, situationism and counterculture, has focused on the issues of the "oppressed" and it has increasingly strove to regulate private spaces. Now the left has ceased to be a struggle of the working class. It has gained a much wider cultural and social meaning, and has begun to take all the values of society into determination and shaping. According to third wave leftists: relationships between men and women should be regulated by feminist ideology and women should aspire to its ideals, the words that we utter should conform to political correctness, parents should be progressive and responsible, teachers should be inclusive and supportive, everybody should watch his microaggressions and unconscious racial bias, etc. Gay marriages, abortion, rape and harassment, distribution of salaries and employment on the basis of identities, hierarchical organizations, competitive society, food preferences (veganism), women's quotas, child care, family roles, attitudes towards animals, gender roles, etc. have become the most fiercely discussed political issues. Thus, personal issues and the private life and behaviour of each individual have been politicized and have become areas subject to regulation by leftist ethics. The society has become a place in which people are ever more controlled and socialized with the new problems that leftists continuously find and the gradual increase of social norms (explicitly or tacitly stated) telling people how they should behave regarding these matters. People have ended up living increasingly surrounded by politically correct norms that tell them how to be-

have in every aspect of their lives. This has socialized people even more and has made the tendency to comply with norms more internalized, creating a docile citizenship.

So, in essence, the historical evolution of leftism can be summarized as follows: The first wave left, which emerged with the movement of the Enlightenment in the 18th century, defended freedom of thought, the domination of science and reason in the organization of society, and the rejection of innate privileges. After the realization of those goals, the second wave left concentrated on social rights, social and economic reforms that would emerge in industrialized societies and enabled the broad masses to be integrated into the system, leaving the subsistence economy and working in the production, and later in the service sectors. After the complete realization of these in the developed industrial countries as of the sixties of the last century, the third wave left, with the student and youth movements that started at the same time, focused on many micro-issues that would regulate people's behaviours and daily lives, and would impose on people social norms that made them become a docile component of the system.

An example: Feminism

The path that the feminist movement has followed since its beginning in the end of the eighteenth century is an example of the evolution I have mentioned above for the left generally, which has gradually become deeper than the mere legal rules and has started to shape social norms and the behaviour of the people. The first wave feminist movement[29] initially advocated giving women the right to vote, legal rights for married women, and better education, job opportunities, unionization and family benefits for women. In other words, their aim was to extend to women the rights given to men during the reforms of the first wave left. The focus of the first wave feminist movement during the end of the 19th and first half of the 20th century was generally related to the granting of women's citizenship and political rights, like being able to vote in elections and taking part in public positions. Then, since the sixties of the 20th century, second wave feminism started to focus on social and private life issues. According to the second wave feminism, the fact that women had equal rights in the political life was not sufficient for the establishment of true equality, because inequality was built from outside the public life, from private life, from family life, and women were regarded here as second-class citizens, and therefore deprived of the possibilities of exercising their public rights. According to these feminists, society taught women a specific role of femininity in their private lives since birth. This female role prevented them from taking their place in social life as full equals to men. They could not participate in political life and economic life as men's equals. Thus, the issue of women's rights was

[29] In this section on feminism, I am using the classification of feminists themselves. According to that classification, the first wave of feminism was from its beginning in the late 18th century to the 1960s, and the second wave of feminism was from the 1960s to the 1990s.

no longer a legal issue, but a social issue and an issue that required regulation by social norms.

In the socialist tradition from the late nineteenth century (along with Engels and Bebel), there has been a tendency to see the family as the institution where social exploitation had started, where it manifested itself on a smaller scale and where exploitation based societies were originated in general.[30] Accordingly, the family is a small copy of the exploitation system at social scale, and general human enslavement begins with the enslavement of the woman in the family. Thus, an understanding was born in which social progress was measured by the level of women in society. The desired utopian society wouldn't be reached unless women's liberation would be reached too. General liberation and liberation of women were closely linked. Economic and technological development would bring social liberation and women's liberation. For the feminists, the world of work was where women could gain freedom. By entering the economic life, they could get out of traditional family roles and earn their own money, like men. Because men made their voices heard with their place in the economic life and their organizations (unions, etc.) shaped around the working life, and so they became a power in the society. Women could also gain their rights by participating in this aspect of life. When we look at the process that took place during the twentieth century from today, we see that the result of all this is that women entered economic life and presented their talents for the benefit of the system. Half of the population of the society was thus better integrated into the system. In the newly established technological society, women took their place in the construction and maintenance of the social system, and this system took advantage of it. But in order for this to happen, a certain technological development had to already penetrate society: With the development of machinery, the subsequent loss of the necessity of a great part of the work based on muscle strength, and the development of the service sector, office and white collar jobs, new employment opportunities for women emerged. Women generally participated in employment by taking part in these jobs in large numbers. Simultaneously, the emergence of electric household appliances significantly reduced the burden of housework and created the possibility for many women to enter the working life.

[30] Then Simone de Beauvoir would say that femininity is not an innate feature but it is socially built. This is a reflection of the view that humans are a blank slate and do not have a number of behavioural, intellectual and physiological characteristics that are innate and determined by genetics. And this notion started to constitute the base of the second wave feminism. Using this trick, it became possible to claim that all the things associated with femininity (and masculinity) are a construct of society in order to shape and exploit women according to the needs of the "patriarchy." But in fact, this notion of gender as a social construct makes easier to justify any further attempt to adjust women (and men) to the requirements of the modern techno-industrial society by means of feminist or anti-patriarchal social engineering. Since, according to this gender constructivist ideology, women and men don't have any innate tendencies, much less any innate psychological differences caused by their different biological sexes, so theoretically their behaviours could be shaped into whatever form the system most needs of them. Like inducing more women to study engineering or making men less aggressive and more sociable.

Moreover, these houseworks were becoming out-of-the-family tasks day by day. Food industry preparing meals, companies washing bulk laundry, etc. In other words, the chores that previously people dealt with in the domestic sphere became increasingly done by workers alien to the family circle or outside home.[31] The view that women would be liberated by participating in working life became a legitimizer of the process of integrating women into the system and making their talents and purchasing power available for the techno-industrial society.

With the second wave of feminism and other identity movements, the (third wave) left aimed at transforming people's entire private life, daily life practices and social life. This went far beyond previous feminist goals, which were limited to legal rights and economic relations, and far beyond social-democracy and socialist ideals. This transformation was also allowed and supported by the transformations that took place in the technological infrastructure of the society. Feminist manifestos at the end of the eighteenth century (such as that of Wollstonecraft), emphasized feminism's social character (e.g., seeing the "problems" of women beyond legal arrangements, in the social life itself and defining gender roles as social constructions only), but in order for enough women to grab these ideas, accept the changes in private life and family life that feminism advocated and create from these a second wave feminism, it would be necessary to wait for the sixties, when it was fostered by the changes in the social structure brought about by technological development.

The leftist utopia and the future of the wild

Leftists claim that they are pursuing a world society and a vision of life in peace, with true democracy and social equality, absence of dictatorial regimes, sharing of wealth as equally as possible, lack of poverty and misery, complete equality between men and women, and no environmental pollution or Nature destruction[32], and that the alternative they propose to the existing techno-industrial social system is "another" social system in which these values are truly established. They claim to have moral

[31] Leftist utopia consists in a society in which these collective trends go to the end, with every aspect of the whole life and the whole private space becoming a social activity. A "brave new world" where all everyday chores, from child raising to cooking, become collective and are not handled individually but by the social organization. Child raising has especially important consequences, because childhood is the time frame in which society can socialize its members and inculcate its values most effectively. And as it is done more and more by the institutions of the system (kindergartens, schools, etc.) instead of by the family and a small circle of known and close-to-family trusted people, techno-industrial system becomes more efficient inculcating its values to the new generations.

[32] What the leftists mean when they say protection of the environment is not the protection of the wild, but the protection of the natural resources and environments that the social system benefit from, in a way that enables human beings to live in a healthier (for them) and hence more productive (for the system) environment. Things like protecting drinking water resources, preventing air pollution, or reducing carbon emissions in order to reduce the effects of climate change, which poses a great danger to techno-industrial civilization.

superiority as they defend supposedly good, beautiful and humane things. But what they are actually doing is to make it easy for technology to transform human societies according to its inner logic and to eliminate the remaining wildness on Earth by running people after a sacred bowl (an integrated world society that has solved all its problems) that can never be reached. The main function that leftism performs in the current social system is to act as an insurance for the techno-industrial system and push it to a point where it will function more efficiently.

Another of the goals of the left is the physical facilitation of life and the elimination of financial constraints. This means that, according to leftism, people should be able to meet their material needs without being exposed to physical difficulties and dangers. The necessity of exerting physical effort should be completely removed from daily life and the satisfaction of the needs of shelter, food, transportation, etc. should be provided by the society for the individual. However, to achieve this goal, society must be organized in a collectivistic way. This would mean the complete subjugation of individual's autonomy to social solidarity. And the only way to purge from life all kinds of physical difficulties, dangers and material problems in this way (if it can be achieved) is to improve the capacities of technological civilization to remove physical constraints. For this reason, leftism has to rely on technology as the performer of a life conception in which all the material difficulties disappear.[33]

In the 19th century, the left believed (especially with the hegemony of Marxism in it) that the perfect world, which was dreamed free of all difficulties, would be established with incessant technological development. Accordingly, through technological development, the capacity of production could be infinitely increased, so that people would be free from the physical constraints they had ever been subjected to, and those who had been freed from these physical constraints would have reached "real freedom" eventually. For this reason, technological development had to be made continue until the end, until all limits were pushed out. But since the late sixties of the twentieth century, when the reactions of Nature to this relentless technological development manifested themselves most explicitly, it was understood that an easy, comfortable, materially abundant life could not be established on the world by defending an unlimited growth and that, beyond a certain point, this reckless growth itself removed the possibilities of establishing such a life. For this reason, the idea that the system should be more prudent in the journey of overcoming and exploiting Nature and eliminating physical constraints, and that it should take its steps more cautiously emerged. Concepts such as sustainable development, new "green" technologies, recycling and carbon footprints

[33] The constant removal from life of all the physical hardships and the incessant pursuit of material abundance has become an a priori value that no one questions. But the ultimate logical conclusion of this search will be the closure of human beings into a capsule where all external inputs that will be needed for physical needs are provided with various intubated connections, and the outputs are given out in a similar way, and psychological needs are directly met by mechanisms that artificially stimulate the brain. In today's world, where we are moving rapidly to such a point, we are beginning to experience the negative physical and psychological consequences of this together.

gradually came up and, along with them, an enthusiastic advocacy of these kinds of things by the left. The main role of the left in the system in environmental matters is to identify the excesses and deficiencies of the system, just as in the matters of social justice, and to give feedback to it in order to help tecnoindustrial society be able to correct itself. According to this, by adopting "green" technologies, targeting sustainability and getting to know ecosystems better, tecnoindustrial society could take Nature under control, the destruction of the environment would be prevented through a "sustainable" use of it and thus the system would survive. Consequently, the possibilities of establishing a life where physical difficulties and dangers are eliminated and material abundance is established would be preserved. In order to establish such a life, the existence of modern advanced technology and its further "green" development are essential.

Sustainable development and "green" technologies don't change anything in the tendency of the techno-industrial system in subjugating and destroying wild Nature. In fact they enhance it. It is just a way for the system to try to surmount its problems with Nature and continue its functioning and expansion. In order to litter the world with all the solar panels and wind turbines needed, enormous quantities of space, energy and materials would be necessary and these would be obtained from the Earth, destroying and subjugating wild ecosystems on the way. These new "green" technologies would need to be scattered throughout the world with their corresponding transmission lines, maintenance roads, etc. and it would be inevitable that they fragmented and replaced wild ecosystems. The new "green" transformation of the human society with its wind/solar "farms" and electric cars, would require enormous quantities of special metals, which are called rare-earth metals. The mining and refining of these metals is inevitably a very destructive process and it has already caused enormous damages to Nature.[34] With the projected expansion of "green" technologies these damages will only increase. And furthermore, these new "green" energies aren't freeing the system from its "old" energy sources: fossil fuels. "Green" energy sources are just another energy source for the system in order for it to keep on running its trucks, automobiles, electronic devices, etc. and thus to continue its functions and expansion.

Sustainable development experts will continue to increase their knowledge of the Earth's ecosystems and look for the most efficient ways of exploiting the Earth's resources. In case that the techno-industrial system isn't able to avoid Nature's reactions to its functioning and expansion, it probably will try to use that knowledge in an attempt to mitigate those reactions through geo-engineering activities, with the result of taking the biosphere under total control or, more probably, rendering it in total

[34] "Last year, China's State Council reported that the country's rare earths operations are causing 'increasingly significant' environmental problems. Half a century of rare earths mining and processing has 'severely damaged surface vegetation, caused soil erosion, pollution, and acidification, and reduced or even eliminated food crop output,' the council reported, adding that Chinese rare earths plants typically produce wastewater with a 'high concentration' of radioactive residues." M. Ives (2013, January)."Boom in Mining Rare Earths Poses Mounting Toxic Risks",Yale *Environment* 360.

disarray. The aim of the left's environmental ideology is to ensure the continuation of technological development and to save the techno-industrial system from the reactions of Nature to this very development. They do this in order to sustain the possibilities of the leftist utopia: a human society which dominates Nature and in which all the physical difficulties and dangers have been eliminated and material abundance established. But such a view of life is incompatible with the wild, and the realization of the one will lead to the elimination of the other.

With its commitment to the idea of progress, leftism opens the way to the development of the social values and institutions in the direction that the technological development will need, pushing this way towards the creation of leftists' ideal, supposedly perfect society. According to the idea of progress, with the development of the technological and scientific capacities of the humankind, society will reach to a happier, more prosperous and peaceful future, and this is something absolutely good. The vast majority of leftist currents[35] evaluate the present basing on such perfect future that must necessarily come and which everyone has to defend morally. This is, according to leftism, an absolutely good future that development and progress must bring, and this is the best future for humanity. According to this view, any objection to such a perfect future can only be a reactionary stance, and this can't be but something undeniably bad. The flow of history has only one line and it takes us to the most worth living utopia. This teleological understanding of history attributes a positive moral value to the growth of social complexity and to technological development.

But in reality, technological and social development takes place in the process of competition between the big organizations that develop the technology, without their conscious control. Big organizations are not only corporations and states, but any large and more or less organized groups from entire societies or social systems to armies, trade-unions, NGOs, political and religious movements, etc. The main "purpose" of such large organizations is just to ensure their self-preservation/perpetuation. Their activities bring along the gradual narrowing of the power fields of individuals, who are subjected to ever more stringent controls, and whose behaviour, desires and feelings are adjusted and directed just towards the self-preservation and development of such large social and technological systems. Today, we are under the surveillance, direction and control of large organizations at every moment of our lives. It is under their control what school we are going to study and what we are taught, what job we do and how we do it, what our leisure activities will be, etc. Our physical existence is entirely up to

[35] There are some minority currents of leftism, like anarcho-primitivism and anti-industrialist left, who profess to be against modern technological development. But leftism, in all of its forms, invariably cherish the values of current techno-industrial society, and end up defending some sort of spiritual and moral progress. This renders useless these primitivist/anti-industrial leftists' alleged rejection of modern technological progress; because the values they assume as reference points, and the spiritual and moral progress they run after have their roots in, and are not possible without, a too high degree of technological development.

them. Modern men are no different from the animals in the zoo, which have no power to control their own lives.

Large organizations will continue to increase their power in line with the development of technology. Increasing their power means that they can better control the environment they are in and the functioning of the elements that are part of them, and thus regulate them in line with their own interests (e.g., they can expand the area they control, intensify their control over their current environment and increase the amount of energy and materials they can use for their own activities.)[36] The ultimate logical consequence of all this would be to artificially control both the world ecosystem and human behaviour entirely, in all aspects. According to this, the increase of the power of these organizations will mean the elimination of the wildness of Nature and the control and manipulation of human natural behaviours.

But most probably, the system won't be able to completely and successfully control human societies, human natural behaviours and Earth's ecosystems due to their complexity and the ever increasing size and more demanding self-preserving functions of the large organizations that constitute it, so its attempts to control social systems, human behaviours and wild Nature will cause ever more serious and deeper disturbances and unforeseen negative effects, on the behavior of individuals, and on the functioning of human social groups and the ecosystems.

In any case, the development of technology will result in the disastrous disappearance of at least a great part of wild Nature on Earth and, along with it, the deep modification of what hitherto has been regarded to be human.

Discrepancies between leftist ideals and wild Nature

Human societies' relations with Nature and their effects on it are proportional to their technological capacities. Technological capacities are the physical instruments

[36] The amount of energy and mineral resources that are more easily available at the moment may decrease in the future due to their exhaustion. This would make the system turn to more and more dangerous technologies and energy and material sources that have not been used, not even reached so far, and thus the extent of the damage to wild Nature would continue to grow. We are already seeing today that the system exploits ever farther and more difficult reserves of oil (called unconventional oil) like offshore oil rigs, tar sands and hydraulic fracturing. Solar panels and wind turbines are reaching to ever more remote parts of the world. There are attempts to try to harness the energy of the oceans and seas with wave energy converters. And an enormous amount of resources is being spent on fusion reactor projects like the ITER (International Thermonuclear Experimental Reactor). Control over human behaviour will also increase with technologies like the gathering and analysis of personal data (especially with the development of computer technologies such as machine learning/artificial intelligence), genetic engineering, development of ever more sophisticated drugs, amalgamation of human body and mind with machines (cyborgs), robotics technology and the implementation of all these to more effective indoctrination and oversocialization of humans.

that a society has at its disposal. These are, for example: stone, wooden or bone (or any other animal part) tools for the primitive nomadic hunter-gatherer societies; domesticated animal and plant species, iron agricultural tools, water wheels or wind mills for traditional agricultural societies; and steam or internal combustion engines, nuclear power reactors, computers, etc. for techno-industrial societies. Increased means of technological capacities bring with themselves more power to extract, transform and absorb the material resources and energy sources of the Earth. Since primitive nomadic hunter-gatherer societies had the least developed technological means, their effects on Nature usually were quite small compared to more technologically developed societies: traditional agricultural societies and especially techno-industrial society. At the same time, in nomadic hunter-gatherer lifestyle people can live to the utmost in accordance with their natural tendencies, determined through the evolutionary processes. *Homo sapiens* evolved from our hominid ancestors throughout thousands of millennia of nomadic hunter-gatherer lifestyle. In nomadic hunter-gatherer societies, people lived in small groups and used their own mental and physical capabilities autonomously in order to survive. Their physical existence depended on their own activities and initiatives, not on some remote, collective huge organization as in complex societies. Since they used their own capacities for their own crucially important fundamental needs and they did this autonomously as part of a small group, they had the most optimal possibilities to live through the power process. For these reasons, nomadic huntergatherer societies were the least harmful to wild Nature and offered their members the best possibilities in order to experience the real freedom.[37]

But we know that these primitive societies are precisely the ones in which leftist values (easy and comfortable life, material abundance, solidarity with strangers and large collective entities, equality between sexes, etc.) are the least valid, applicable or feasible. And the disappearance of the technological infrastructure of the industrial society would mean further decline in these values.[38] Therefore people who are against the technological system, who see that it destroys wild Nature and the possibilities of real freedom, should not promote the leftist values at the same time. As I have tried to show in this paper, these values started to appear with the emergence of the complex agricultural societies and their extent and density greatly increased with the industrial revolution and the subsequent accelerated development of the modern technology, because these values are necessary and greatly useful for the maintaining and the efficient functioning of the techno-industrial system.[39]

[37] As I have tried to explain in the text, real freedom consists in the possibility of living in wild Nature and satisfying the physical needs with the autonomous activity of one's own capabilities, either alone or as a part of a small group.

[38] See *"The Truth about Primitive Life: A Critique of Anarcho-Primitivism"*, *Technological Slavery: The collected writings of Theodore J. Kaczynski,* Feral House, 2010, pp. 126–189.

[39] The other reason why these values have become so popular and have been advocated enthusiastically by many people is that, the lifestyle of techno-industrial society makes people psychologically inclined to these kinds of values.

Anarcho-primitivists and other leftists who claim to disown technological progress are no different in this regard. In fact, they totally internalize these leftist values and project them onto both their misguiding idealized image of past primitive societies and their ideal, utopian future "primitive" societies. And by promoting leftist values, they in fact are helping the technological progress which created these values in the first place. In short, the values of human communities are basically shaped by their technological infrastructures and we know that modern leftist values do not apply well in societies which do not have modern technology. Leftist values have begun to become dominant values because of the development of technology and the growing complexity of human communities, and the disappearance of this technology and complexity would mean the disappearance of these values (and the possibilities to materially apply them) to a large extent.

In the absence of advanced technology, society wouldn't be able to further remove the natural constraints, material abundance would be gone for vast majority of people and a physically hard life would come again, as it existed before modern technology. In the absence of global communication and transportation, most people would again begin to live closely connected in small groups and the unconditional love and solidarity with a large, unknown crowd would be history. With the absence of modern occupations and economic activities, traditional daily activities would return and with them the traditional roles of men and women. Without the material resources of a technologically advanced complex society, possibilities of modern high education, health services, and scientific research would be gone too. Therefore if one's mostly cherished values are a materially abundant and easy life, a society where natural restrictions are eliminated in the utmost fashion possible, where gender roles are erased, where everybody loves each other unconditionally, where health technologies lengthen the life expectancies and science increases its knowledge of the universe, etc. it is non-sense to be against the technological progress. And vice versa, if one wants to get rid of modern technology and of the technoindustrial social system it implies, and thus to save wild Nature, human natural character and the possibilities of real freedom from the system's subjugation and destruction, then one has to be aware that whatever comes later won't be a rosy and easy way of life. You can't eat your cake and have it too.

Conclusion

Of course it is not certain, or I assume not even highly probable, that the consequences of the technological progress regarding the human condition will be in all cases as enumerated above. If large organizations can eliminate their dependence on human labour and/or if the accelerated disturbances in ecosystems, which are created by the functioning and expansion of the technoindustrial society, started to manifest their consequences more explicitly, the results of the technological development regarding the human condition might be quite different than those we have experienced

until today. But these are speculations I won't discuss here. What is certain in all scenarios is that unchecked technological development will entail even further destruction of wild Nature, greatly diminished ecosystems and perhaps the disappearance of complex life forms on Earth. This will mean the utter destruction of the conditions for real freedom. Even if we assume that human beings will be able to survive, they will be further socialized with psychological and/or biological techniques (like genetic engineering) and will live in a wasteland of greatly degraded ecosystems, artificially controlled in order to keep them within the limits in which humans can live and thus utterly dependent on large organizations and their technological abilities of regulating the outside environment.

Therefore those who cherish wild Nature and want to protect it should see the real cause of its destruction: the technological development. Those who see that people have become mere cogs in a giant machine and feel that they have lost the control, and even the meaning, of their lives should see the real reasons behind it: the ever increasing control of the large organizations over the individuals and small groups as a result of the accelerated development of the technology. And leftism is not a movement against this development but actually a promoter of it, a safety valve for the system that re-directs and absorbs the discontents and even turn them into promoters of the very values of the techno-industrial system.[40] What is needed in order to protect wild Nature and the possibility of real freedom is a movement against techno-industrial society which is free from the leftist values and confusions.

[40] This is another important function that leftism performs in the technoindustrial system, but it has not been discussed in this text. For a discussion on it see: Theodore John Kaczynski, "The System's Neatest Trick", *Technological Slavery,* pp. 190–205; and Ultimo Reducto, "Leftism: The function of pseudocritique and pseudo-revolution in techno-industrial society".

Possible Reactions of the Techno-Industrial System to Climate Change (Tekno-Endüstriyel Sistemin İklim Değişikliğine Olası Tepkileri)

Saturday, November 20, 2021

The techno-industrial system faces a grave danger: climate change.[1] It is dependent on the resources of the biosphere to function. For this reason, the stability of the biospheric functions is crucial for its effective functioning. Climate change means a sudden change in the conditions of the biosphere. According to *The Economist*'s October 30th (2021) issue, it is changing the rain patterns, water cycles and will have adverse effects on crop yields. It is increasing the frequency, intensity, and duration of droughts and heatwaves. The great ice sheets of Greenland and Eastern Antarctica are destabilizing and this, in turn, makes it easier for mid-sized hurricanes to intensify into powerful storms causing enormous damage. Sea levels are rising and threatening coastal cities. The biodiversity of the oceans is under stress due to ocean acidification and sudden change in sea temperatures. The tropical zones are becoming virtually unlivable. Massive wildfires burning huge areas are becoming more and more frequent. All these are happening extremely fast and forcing the adaptive capabilities of the techno-industrial system. It should either adapt itself to these new conditions by changing itself (its energy infrastructure, the consumption level of its members, etc.) or try a desperate move in its *fuite en avant* and take on its own hands the governing of the atmosphere.

The Economist's October 30th (2021) issue dedicates a special report to this dilemma, and it investigates some possible answers to this urgent threat. *The Economist* represents the ideological orthodoxy of the techno-industrial system. For this reason, following its arguments and suggestions on this issue might help discern the techno-industrial system's possible reactions to climate change.

[1] Climate change is also a grave danger for wild ecosystems. But in this text, we try to look into the issue from the system's perspective to delineate its possible reactions. The probable solutions that the system will come up with would chiefly represent even more dangers for the wild Nature.

As *The Economist* mentions, the use of fossil fuels was the most transformative event after agriculture. It brought a massive growth in population and people's "wealth." But the side-effect of this development, the accumulation of CO_2 in the atmosphere, has a "potentially show-ending role." Thus, world governments should embark on a vast project. They should stabilize the climate. In *The Economist*'s words, this project will entail:

The curve-flattening climate stabilization will be the result of deliberate interventions in both the economy and nature on a global scale. And it will be maintained, if it is maintained, by human institutions with the astonishing, and possibly hubristic, mandate of long-term atmospheric management.

The Economist explicitly declares that to ensure the existence of the techno-industrial system, it is necessary now to embark upon a comprehensive transformation not only at the level of economic infrastructure but also on Nature on a global scale. The system should embark upon long-term atmospheric management. In the special report, other, more traditional answers are also evaluated and suggested, but these evaluations are always ending with implicit desperation about the shortcomings of the "traditional" solutions or with a reminder of the fact that it is now too late to rely only on these "traditional" remedies. Let's look at with *The Economist* what are these more "traditional" remedies are.

The most publicized of these "traditional remedies" is that the techno-industrial system should quit its fossil fuel addiction. Things don't look good in that regard. Despite the global UN Conventions and pledges to decrease fossil fuel consumption, it increases year by year. According to *The Economist*, "in 1992 78% of the world's primary energy –the stuff used to produce electricity, drive movement and provide heath both for industrial purposes and to warm buildings– came from fossil fuels. By 2019 the total amount of primary energy used had risen by 60%. And the proportion provided by fossil fuels was now 79%." Therefore, after all the pledges to "stabilize greenhouse gas concentrations in the atmosphere" in Rio de Janeiro in 1992 to Paris in 2015, the absolute consumption of primary energy sourced by fossil fuels increased by 62%!

The Economist tries desperately to appear hopeful about the "new," "alternative" energy sources: wind and solar. It boasts about the reduced cost of wind turbines and solar panels. But there is no indication that wind and solar are replacing fossil fuels. *The Economist* gives only statistics on their absolute growth. "In 2020, the share of the world's energy generated by solar panels grew by 21%, which points to a doubling every four years. Wind, which now supplies twice as much energy as solar, is growing more slowly, by 12% a year." These figures only represent the absolute growth in solar and wind energy production; they are typical considering the ever-expanding energy hunger of the techno-industrial system. They don't indicate that wind and solar power are replacing fossil fuels. As can be seen in the below graph, energy consumption increases for all the sources in absolute numbers. The trend of the traditional biomass (woodfuels, agricultural by-products, and dung burned for cooking and heating purposes) in the

below graph is illuminating. It is the source of energy humans have been using since they discovered the use of fire. But as we can see in the below chart, it hasn't been replaced by coal or oil after the industrial revolution. It continues to be consumed at its peak level. In energy supply, one source of energy doesn't replace the other. As far as there is available energy, the techno-industrial system adds one source on top of the other and increases its total energy consumption. This is and will be the case with the solar, wind, and other "alternatives;" they will be added to the total (increasing) energy consumption without replacing the fossil fuels (which still represents the gross majority).

It is clear that fossil fuels will continue to be burned in the foreseeable future, and the absolute consumption of these fuels hasn't peaked yet. *The Economist* suggests carbon pricing as a remedy. Carbon prices would artificially increase the cost of fossil fuel energy generation and make it more expensive than solar and wind. It is such a pipe-dream. Applying this strategy with the necessary rapidity and brutality to cut back emissions drastically in the required time is virtually impossible without shaking the foundations of the system. It would mean economic collapse, enormous decreases in living standards, and extreme backlash from the population. Much more timid policies encountered angry backlash in recent times.

Apart from carbon dioxide, there are other greenhouse gases: Methane (from the natural gas industry, rubbish heaps, and livestock), nitrous oxide (mostly from agriculture), and chlorine-bearing industrial gases. Again, there is no hope of a timely solution to these emissions. "Big reductions in agricultural emissions of methane and nitrous oxide emissions will take time," says *The Economist.* Apparently, the recent propaganda campaign in favor of veganism isn't producing the expected results.

Another problem is "sulfur-dioxide emissions which are mostly associated with burning coal and heavy oils." Burning coal and heavy oils produce small airborne particles of sulfate, offsetting greenhouse warming. Therefore, decreasing the consumption of coal would exacerbate in the short term the climate change. The system is on the horns of a dilemma here.

In Paris in 2015, governments made pledges of voluntary reduction in CO_2 emissions, so-called "nationally determined contributions (NDCs)." NDCs are not binding commitments, and there isn't any regulatory power that would ensure the fulfillment of these pledges. They are castles in the air. But even these pledges wouldn't be enough to limit global warming to 2^{o} C, let alone to 1.5^{o} C. "[E]ven in Paris, it was clear that the 1.5^{o} C limit could not be met by emission reductions alone. They would have to be supplemented by something else: the withdrawal of CO_2 from the atmosphere by means of 'negative emissions.'" But again, despite all the noise regarding the need for negative emissions, there isn't any effective method today to achieve it. "Mechanisms which can provide lots of reliable CO_2 removal remain, at best, embryonic," sighs *The Economist.* We will come back to this below.

Besides, there is "the Asia problem." More than half of the global population lives there, and Asian countries constitute a great part of the so-called "developing coun-

tries." They aspire to raise their citizens' living standards; it can only be done by increasing energy consumption. On top of that, these countries have increasing populations. They have to grow economically in order to absorb the new generations into the economy. Otherwise, they might experience economic crises, massive unemployment, and social instability. *The Economist* says that "two-third of global coal produced there" and "Asia produces most of the world's cement and steel." As if this is a vice unique to Asian countries, and the developed countries of Europe and North America extricated themselves from this nasty habit of coal, cement, and steel. But this is far from the truth. If developed countries seem "better" in that regard, the reason is that they mostly shifted their manufacturing sectors to Asia for lower production costs. They have exported the emissions; their economies continue to depend on coal, cement, and steel.

In this special report, we witness inside-the-system debates on capitalism and degrowth. Third-wave leftists,[2] like Naomi Klein, claim that it is impossible for capitalism to wean itself from fossil fuels. Since capitalism is driven solely by profits, the fossil-fuel industry will insist on putting profits ahead of the threats of climate change. Therefore, to get rid of fossil fuels, it is necessary to get rid of capitalism. As good first-wave leftists, the writers of *The Economist* refute this claim. According to them, to reduce dependence on fossil fuels, new technologies and new investments are necessary. And capitalism has proven itself the most successful economic system to provide both. "All that is needed is to find ways to ensure that growth does not have to be linked to rising CO_2." *The Economist* uses the below formula to demonstrate the relationship between development, energy, and CO_2 emissions.

$$CO_2 = \text{population x (GDP/capita) x (energy/ GDP) x } (CO_2/\text{energy})$$

According to this formula, to decrease the CO_2 emissions, one has to cut back either population, GDP per head, energy used per unit of GDP, or carbon emissions from that energy. *The Economist* explains that reducing population using a long-term strategy "is not a course of action that governments can effectively and decently pursue." We also agree with that. First, it is impossible to implement a long-term population control globally as a concerted international effort. Second, as long as the system needs mass human labor for its functions, population control is detrimental to the economies of individual countries. As we have witnessed in China's one-child policy, in addition to problems such as destroying the balance of sex ratio in a population, population control increases the dependency ratio enormously. Increased dependency ratio has enormous adverse effects on the economic performance of a country. For these reasons, besides the impossibility of a concerted international effort of population control, individual countries also won't implement a drastic population control strategy that would be rapid enough to curb the CO_2 emissions in time.

[2] For a more detailed discussion of the leftism's development (first, second, and third-wave leftisms) and its role in the system, see *Karaçam, "Leftism, Techno-Industrial System, and Wild Nature."*

What about GDP per head? It has increased enormously since the Industrial Revolution thanks to the concentrated energies humanity obtained from fossil fuels. As *The Economist* also mentions, if GDP per head continues to increase, the improvements in energy efficiency and carbon intensity would merely keep carbon emissions stable. So is it necessary to decrease GDP, roll back the growth to save the system from climate change? *The Economist* gives several reasons why it would be impossible to implement degrowth consciously according to a strategic plan. These reasons are not wrong in themselves, but they miss the fundamental, underlying causes why it is impossible to implement these kinds of long-term comprehensive plans. But first, let's look at the reasons *The Economist* gives for the impossibility of such an action:

1. To implement a long-term reversal of growth, everyone else (i.e. the entire human population) should be persuaded to consume less. Anybody who has a modicum amount of common sense will know that this is impossible. Therefore, governments should implement a dictatorial policy to ration the consumption of their citizens. However, as *The Economist* puts it, "[a]n overt policy of deliberately slowing, stalling or reversing long-term growth, even if presented as being for the good of the world, is a highly unpromising platform on which to win elections." From this citation, it sounds like only "democratic" countries would face problems rationing the consumption of their citizens. Authoritarian regimes also need to seek the consent of their populations as long as human labor power is necessary for the functioning of the economy. The consent is primarily produced in today's modern world (where humans live in a modern zoo separated from their natural habitats) by consumption possibilities (electronic gadgets that isolate people in a virtual world to make them forget their dismal existence, the pursuit of commodities that offers people a pseudo purpose in this purposeless world, etc.) which require growth. In the short term, in which a response should be given to climate change, mass human labor will continue to be necessary for the system's functioning. Therefore, it would be impossible to play the degrowth card that would affect immensely the living standards of the masses.

2. Decarbonisation can only be realized by massive investment in renewables[3]; this is especially true for emerging economies. Much of the investment necessary to build the new "renewable" energy infrastructure should come from the developed countries, and without growth, there won't be any incentive for investment.

3. Decarbonisation process will require accelerated innovation. As an economic system, capitalism has the best record of fostering innovative ideas and implementing them on a broad scale. The system will need capitalism's that feature. According to *The Economist*, "better ways of storing energy, of heating houses, of cooling houses, of processing crops, of growing crops, of powering large vehicles, of producing plastic and more" will be needed to reduce the CO_2 emissions. These cannot be done in the framework of a "contracting, low-demand, low-investment economy."

[3] As long as you want to keep the techno-industrial system alive.

The reasons that *The Economist* gives for the impossibility of planned degrowth misses the most fundamental reasons. First, it is impossible to direct the development of a complex system — especially a system as complex as the global techno-industrial system — by devising a long-term plan and implementing it in real life. Complex systems are composed of numerous components. It is impossible to know the myriad of relations between these components; how they affect each other in self-reinforcing feedback loops. Planned degrowth would require a long-term plan that should be implemented globally. One has to know the consequences of this plan on the global system, and this is impossible. There will always be unforeseen consequences of the actions taken to reach the planned intention. Besides, the aim or the determination of actors who undertake this plan can change in time, and even the actors themselves can change or disappear.[4]

The other reason that makes impossible the implementation of long-term degrowth is the existence of the "self-propagating systems."[5] A self-propagating system is a system that tends to promote its survival and propagation by either indefinitely increasing its size and/or power[6], giving rise to new systems that possess some of its own attributes or doing both of these. Nations, corporations, labor unions, churches, political parties, mafia organizations, etc. are all self-propagating systems. The Darwinian selection processes that function in biology (natural selection) are also operative in environments where these systems are present. This selection process favors self-propagating systems that have the most conducive characteristics for self-propagation. As a result, these systems tend to propagate themselves and squeeze out or absorb other self-propagating systems that don't have these characteristics. They are in constant "competition" with each other. This competition isn't so much a deliberate antagonism but more of an unconscious process. Self-propagating systems that expand their functions by incorporating more energy and material into their metabolisms will increase their material power; thus, they will absorb or side-step other self-propagating systems. Therefore, implementing a voluntary degrowth strategy would be a sure recipe of disaster for the systems that pursue it. They would relinquish the advantage to the systems that relentlessly seek their aggrandizement and expansion by absorbing each passing day more energy and materials. Systems implementing degrowth would be eliminated, devoured, or side-stepped.

We find the discussion on capitalism and all the noise the third-wave leftists make on it utterly meaningless. First of all, it is not clear what they exactly mean by "capital-

[4] For a more detailed discussion on the impossibility of controlling the development of society, see the first chapter of the *Anti-Tech Revolution: Why and How* by Theodore John Kaczynski (Fitch & Madison, Second Edition, 2020.)

[5] For a more detailed discussion of the self-propagating systems, see the second chapter of the *Anti-Tech Revolution: Why and How.*

[6] By "power", we don't necessarily mean exercising authority over people or organizations. We mean material capacity: The geographical extent of the functions of a given system, ability to control energy and material flows, and how big these flows are.

ism." But it seems that they imply an economic system designed, created, and managed by some selfish, greedy people (financial speculators, big oil, one percent, etc.) who try to maximize their profits whatever may come. But "capitalism" is not something consciously designed, created, and managed. The things that are generally associated with "capitalism" (financial instruments, modes of property ownership, social classes, economic theories, etc.) have developed during the evolution of complex human societies. They aren't consciously designed and implemented by anybody for a definite result. They are the result of the Darwinian selection process that is operative on human societies. Those properties that are more conducive for the growth/development of a society end up being selected by this blind selection process. And the phenomenons that are generally associated with "capitalism" came into being through this process. They developed and spread globally with the advancements in technology and accompanying complexification of human societies. By pointing out as the main culprit to "capitalism" as if it is consciously preferred and deliberately continued by some people, and therefore it can be eliminated and replaced by the decision of some other people, they deflect the attention from the real problem: The existence of a most complex human society that is primarily grounded on material conditions (energy and material resources, the technological infrastructure that makes use of these resources, and the resulting consequences in demography, ecosystems, etc.), not on the property relations, class structure of the society, financial speculation, greedy oil businessmen, etc. Besides, despite their endless rhetoric about alternatives to "capitalism," it is impossible to hear any alternative from them. Apart from the tried and abandoned command economies of socialist countries, what is the alternative to "capitalism"?

In sum, according to *The Economist*, the techno-industrial system isn't capable of affecting a change at the first two variables (population and GDP per capita) of the above CO_2 equation. Population control is impossible. It will continue to rise until the middle or the end of the century and will continue to be an increasing factor of CO_2 emissions, let alone a decreasing factor. Implementing a degrowth strategy and decreasing the second factor is also impossible for the techno-industrial system. On the contrary, growth is necessary to face climate change. Since the techno-industrial system can't shut itself off, to restrain its effects on the earth's atmosphere and save itself from the abrupt changes that would cause, it should implement a colossal transformation in its energy infrastructure. This transformation will require accelerated technological development and the implementation of these new technologies on a global scale. The only way to realize these are investments and economic growth. "Grid-linked gigawatt world of sky-scraper-topping turbines and solar farms" should spread over the landscape. The technological advancement should find remedies to their intermittency problem (wind turbines and solar panels can't function at the unsuitable wind and cloudy weather, respectively). But, these "traditional" remedies won't be enough to limit the effects of climate change to the acceptable levels for the system, at least in the period it is needed. Therefore, something more is necessary.

One option for "something more" is the so-called negative emissions. The following numbers given by *The Economist* demonstrate the necessity of negative emissions for the system: "The cumulative CO_2 emissions budget consistent with a 50–50 chance of meeting the 2º C goal is 3,7trn tonnes. The budget for 1.5º C is just 2,9trn tonnes. With 2,4trn tonnes already emitted, that leaves a decade of emissions at today's rates for 1.5º C, maybe 25 years for 2º C." That means there is no place to go. If the system can find a way to suck back some of the CO_2 already emitted, it can gain more time to change or adapt itself to climate change. Several methods are floating in the air for "negative emissions." But most of them, like direct air capture or increasing the alkalinity of oceans by adding lime to it to increase the dissolution rate of carbon in seawaters as carbonate ions, are science fiction and fantasy right now. They would create more problems than solutions: They would need massive amounts of energies to implement and have unforeseen adverse effects on ecosystems.

A more plausible method of negative emissions for the system would be biomass energy with carbon capture and storage (BECCS). Plants that capture carbon from the atmosphere through photosynthesis would be burnt in power stations as fuel, and the resulting carbon emissions would be captured and stored. Negative emissions scenarios in the climate models (such as United Nations' IPCC models) rely on this method. But one can easily imagine the enormous dangers that this method would create for wild Nature. As *The Economist* also mentions, "its large-scale deployment requires vast amounts of land be turned over to growing energy crops: in some estimates, an area equivalent to up to 80% of that now used for food crops would be needed." When one considers the ever-increasing energy demands of the techno-industrial system, the area needed to grow the plants that will be burned in power stations would only grow. Large tracts of wild ecosystems such as forests and prairies would be turned into fast-growing, industrial tree plantations. Since this method would have the "green" and "sustainable" image, it would be done with more impunity and even with a claim of restoring "nature." In fact, according to *The Economist*, this has already happened in Chile: "In Chile, government subsidies helped establish 1.3m hectares of tree plantations since 1986–but a rule requiring that this expansion should not happen at the expense of native forests was not enforced. As a result, the program actually reduced the amount of stored carbon by some 50,000 tonnes." But even the large-scale deployment of BECCS doesn't look promising enough to solve the system's climate change problem in time. The area needed for the large-scale deployment is too big. The system needs its agricultural land to feed its enormous population. As the above example from Chile demonstrates, if tree plantations replaced wild forests, the net result would be more carbon in the atmosphere, contrary to the aims of the negative emissions program.

The other possible reaction, and possibly the most dangerous one for the wild Nature, is that the techno-industrial system might attempt to "govern the atmosphere." As we said, *The Economist* represents the orthodoxy of the ideology of the techno-industrial system. In this special report, the chain of argument implicitly points toward the "governing of the atmosphere" as the best (or even the only) possible option to "fix"

the climate change in the short time frame that it should be dealt with. Geoengineering is still controversial; there are many uncertainties regarding its consequences, who has the authority to implement it, etc. That is why we don't see (yet?) blatant advocacy of geoengineering in this special report or the media in general. But we see it discussed more and more as a possible option, and a magazine like *The Economist* defends and proposes it as a solution shows us where the trend is going.

There are several proposed methods of geoengineering, but the most popular and the most studied one in the models is solar geoengineering: Spraying reflective particles in the stratosphere so that they reflect sunlight into space and create a cooling effect that balances the greenhouse effect of CO_2 in the atmosphere. According to *The Economist*, geoengineering is cheap, "it seems likely that putting a veil into the atmosphere would be comparatively cheap," and it could be undertaken "by a relatively small fleet of purpose-built aircraft." *The Economist* sees the application of a solar-geoengineering program implemented with global cooperation as the miraculous solution. If only the world as a whole could come together and implement a solar-geoengineering scheme collectively, it would provide "climate benefits to almost everyone and serious problems to almost nobody." It would give the system breathing time to adjust its energy infrastructure accordingly. And when the CO_2 level was low enough, "the governing of the atmosphere" would be phased out, leaving behind a stable climate.

Of course, this optimistic scenario of "fixing" the climate ignores some crucial and insurmountable obstacles that such a venture would inevitably face. Even if we assume that the whole world could come together and implement a global solar geoengineering scheme, we can be pretty sure that the consequences of such a scheme would be quite different than expected. Earth's atmosphere is a complex system. We don't know exactly how it functions, the feedback loops among its components, and the relationships it has with the rest of the biosphere. Our models of atmosphere or climate aren't the reality itself but an approximation and simplification of it. When such tinkering with the atmosphere begins, there would be inevitably unforeseen consequences. To mitigate the effects of these unforeseen consequences, more tinkering would be necessary. And this process would go on in a self-reinforcing feedback loop until the natural mechanisms that keep the chemistry of the atmosphere and climate in certain limits lose their function. When that happens, the stability of the earth's atmosphere and climate would be dependent on the artificial governing of the techno-industrial system. In an eventual collapse of the techno-industrial system, the artificial governing of the atmosphere would cease, and its composition might reach a state where it can't sustain complex living organisms.

On the other hand, mitigating the effects of climate change with the artificial cooling of geoengineering would relieve the pressure of reducing CO_2 emissions. The techno-industrial system is still essentially dependent on fossil fuels for its energy needs. With an artificial method of suppressing the effects of burning fossil fuels, companies and governments would increase their CO_2 emissions with more impunity. That, in turn, would create the necessity of more intense intervention to the atmosphere and so on.

But more probably, solar-geoengineering won't be implemented as a globally concerted collective endeavor. It is improbable that all the world governments come together in concerted action to implement such a plan. Solar geoengineering would have different effects on different countries. Some will oppose such an endeavor, some will be more reticent, and some will want an immediate implementation. They will have diverse ideas about how to implement it. Since the application of geoengineering is relatively cheap, one or a group of more eager countries might choose to implement it on their own and can do it with their own resources. As we have said, we can't know the precise consequences of geoengineering beforehand. One possible consequence would be the changing of the water cycles. Countries that implement unilaterally solar-geoengineering would choose to pursue primarily their own benefit; they might cool part of the planets while disrupting water cycles in other parts producing negative consequences for other countries. That might elicit reprisals in the form of more solar-geoengineering, and the atmosphere's chemistry might be devastated more rapidly with every country tinkering with the atmosphere for its own benefit. But regardless of how it is carried out, "governing the atmosphere" would represent the most comprehensive attack on the autonomy of wild processes.

The techno-industrial system is in a relentless *fuite en avant.* Its functions create disruptions in the processes of the biosphere. But since it still is dependent on wild Nature for its existence, these disruptions also create threats to its effective functioning and survival. To mitigate those effects, it comes up with palliatives in the shape of techno-fixes. But these techno-fixes, in the end, create deeper problems. In its headlong escape from the problems its existence generates, the system keeps getting more complex, bigger, and bulky. Its disruptive effects on biospheric processes get more intense, destructive, and numerous. Climate change and the system's reactions to it is one representation of this process. The techno-industrial system has already littered and continues to litter the environment and the wild ecosystems with the wind turbines and solar panels in its quest of adapting its energy infrastructure to climate change. It created enormous damages with the mining operations necessary to procure the needed metals to produce wind turbines, solar panels, electrical batteries, etc. It plans to turn massive areas into industrially produced tree plantations to feed its never-ending hunger for energy with more "sustainable" methods. But all these aren't enough for its timely adaptation to the new climate that it is creating. Therefore, it is getting ready to attempt the most daring of its endeavors yet: "governing the atmosphere." Apart from its complete destruction, nothing will stop it; its *fuite en avant* will only continue with accelerated speed and devour the remaining autonomous wild processes.

Capitalism: The Boogeyman of Leftism

Saturday, December 2, 2023

Introduction

This paper is about a myth, a boogeyman that has been concocted by leftists[1] around the concept of "capitalism".[2] This myth veils the real reason (modern technology) for the problems that we face today (the destruction of Nature; the misery of modern life; the great dangers looming over us such as artificial intelligence, biotechnology, nuclear weapons, etc.). This boogeyman, by masking the real reason that creates (or at least aggravates) these problems, prevents us from seeing the real culprit and from contemplating an adequate solution to our modern predicaments. We will try to show that "capitalism" is only a result or another consequence of technological development. Focusing on "capitalism" and portraying it as the main culprit obfuscate the deeper inherent problems our technological society has –and will continue to have– regardless of its economic system.

During our discussion, we will compare "capitalism" and "socialism."[3] We should emphasize that, while doing this, we don't say that one is better than the other. To our value system, both of these economic systems are bad. They appeared as alternative economic systems for the incipient industrial societies from the 17^{th} and 18^{th} centuries. Since we regard wild Nature as the most valuable thing and the techno-industrial

[1] In this text, we refer to the second and third-wave leftists when we use the term leftists: Those leftists that are descendants of the socialist left. First-wave leftists (current liberals) don't see "capitalism" as bad. For them, "capitalism" is the ideal economic system that functions best and brings happiness, prosperity, freedom, technological advancement, etc. For the historical development of leftism, see: [[https://drive.google.com/file/d/1pzXh5DzMs0H3zG9GObMOh9lwp9eBu2M0/view?usp=drive_link][Karaçam, *Leftism, Techno-Industrial System, and Wild Nature.*]

[2] Despite the fact that all the "vile" things are being attributed to it, it is rare to encounter a clear definition of capitalism. Essentially, capitalism means an economic system that isn't managed by a single actor according to a central plan. When we mention capitalism in this text to refer to an economic system, we mean this meaning of the word.

[3] Though these economic systems have never appeared in their pure theoretical forms (total absence of state intervention in the case of "capitalism" and total control of the economy by the state in the case of "socialism") in real life, there were rival social systems in the 20^{th} century that approached to these theoretical alternatives.

society is the greatest danger wild Nature faces, it should be obvious that we see both "capitalism" and "socialism" as abhorrent. We only analyze these two systems to show whether focusing on attacking "capitalism" to protect wild Nature is a good strategy or not, whether the root cause of the problem is "capitalism" or not, and whether we really have a choice between "capitalism" and an alternative economic system given the continued existence of the technological system.

According to leftists, "capitalism" is responsible for all the evil things in the world: all the injustices, poverty, wars, destruction of the environment, the unhappiness of people, COVID-19, etc, etc. However, leftists hardly ever clearly define what "capitalism" is. We can only somewhat discern what they mean by it by all the "vile" things they attribute to it: They most frequently complain about the profit motive. Because the corporations operate in a "free market" with the sole purpose of making profits, they don't care about the welfare, health, or happiness of the people; they don't care about the inequalities, injustices, exploitation, and destruction of the environment that their profit-oriented activities inevitably bring. For this reason, according to leftists, capitalism cannot solve the problems that humanity faces. They also complain about the hierarchical nature of capitalism. Leftists claim that in "capitalism", one class of people who owns the capital (productive forces) accumulates virtually all the material wealth the society produces, and exploits people who don't have capital. They say that people at the top concentrate in their hands more and more portion of the social wealth, and leave the rest of the population in misery. According to leftists, because class divisions are inherent in "capitalism" and because it fosters competition and exploitation in all the domains imaginable, it also creates other hierarchical divisions such as the division between sexes (patriarchy), between races (racism), between the developed and underdeveloped nations (imperialism), etc. Therefore, leftists suggest, we should destroy "capitalism" and create an alternative economic system in which the sole purpose would not be to make profits but to satisfy the "real" needs of the people according to a global rational plan. With such an economic system at hand, we would eliminate class, sex, and national divisions; wars would be a thing of the past; and we would satisfy the basic needs of all people while ending the destruction of the environment.

Leftists create a boogeyman with their narrative about "capitalism." This boogeyman is useful to them for several things. By focusing on this boogeyman, they can divert attention from the real and underlying cause (technological development) of some of the problems that they complain about. Leftists should divert attention from the technology problem and focus the blame on something else because technological development has a central role in leftist ideology: Technological development would eliminate poverty from the face of the world, free people from material hardships, and would create the conditions of a perfect, harmonious, and collective human society. The masses would be enlightened by the technologies of communication and transportation. Modern technology would harmonize all cultures, and humanity would live ever happily in universal brotherhood. Modern technology has all these potentials, but "capitalism" prevents humanity from using these potentials of technology. According

to leftists, under the conditions of "capitalism," technology is being used for the sole purpose of profits without any concern for the welfare of people and society and all the damages that are being inflicted on the environment. For this reason, according to leftists, humanity cannot benefit from the "progressive" and "egalitarian" potentials of modern technology. Modern technology is good or neutral in itself, they say; it only creates bad results because it is in evil hands.

Leftists cannot give up technology due to their psychological condition as well.[4] Leftists, because of their psychological condition (feelings of inferiority and oversocialization are the two main psychological tendencies of leftists), want collective power. Modern technology is the best instrument to attain collective power. Without modern technology, you cannot create crowded mass organizations and lead those masses through modern indoctrination and manipulation technologies. Modern technology gives enormous means to achieve power over people. On the other hand, technology is essential for building a socialist brave new world. Building a socialist utopia would require enormous amounts of brainwashing, propaganda, discipline, and physical suppression of those people that do not consent to this type of society. Collective conditioning and physical coercion of the masses can only be done effectively by using modern technological means. Besides, the great majority of people revere modern technology. Since leftists try to establish a mass movement, they perhaps cannot reject modern technology from a strategic point of view as well. They don't want to alienate the masses of people from their ideology.

The psychology of leftists makes it extremely hard for them to reject modern technology because modern technology and the associated ideas of progress (the welfare of humanity, creating better conditions for humans by the enlightened values of equality, security, peace, education, etc.) is the *nec plus ultra* of the current social system. Due to their oversocialization and inferiority complex, they cannot bear to be seen as reactionary barbarians who reject those values. They need to feel embraced by the social collective; they need social approval to balance the negative emotions created by their oversocialization and inferiority complex.

The story about "capitalism" presents a very effective tool to express social problems in the framework of personalized hatred, and this has some utility in several respects. It makes it possible to attribute all the blame to wealthy people, owners of capital, the upper classes, the "one percent," etc. "The downtrodden," "the oppressed," and "the lower classes" are forced to live an awful life solely because of these "bad" people. They are poor, unhappy, unsatisfied, and unsuccessful because of the people who oppress them. The environment is being destroyed, there is still hunger in the world, wars are still going on, and some countries are underdeveloped because the "elites" only care about themselves and their profits. So "ordinary" people are "good," and they are "victims" of some "bad" people. Thereby, the narrative around "capitalism" becomes a

[4] For the psychology of leftism, see: Theodore John Kaczynski, "Industrial Society and Its Future", ¶¶ 6 – 32, in *Technological Slavery: Volume One*, Fitch & Madison Publishers, 2019, pp. 24–31.

convenient tool to vent frustrations, usually generated by some impersonal structural reasons, to some "villains." That soothes the inferiority complex that is so prevalent in modern conditions, both in leftists themselves and in public in general. Besides, it is much easier for most people to "understand" the issues when they are portrayed in a framework where "bad" people are culprits and good people are "victims" than in a more complex framework where people are cogs in a giant social system that works mechanistically.

Most importantly, the boogeyman about capitalism deflects attention from the real and most vital aspects of the system, from its real functioning and essence. It focuses attention on its secondary characteristics that don't necessarily define its nature. Therefore, it acts as a defense mechanism for the techno-industrial system. It creates the illusion that there really is a critique of the existing social system, that this critique really portrays the system's functioning and proposes a real alternative to it. On the other hand, the critique of capitalism points out some defects in the system's functioning, defects (excessive inequality in wealth, excessive poverty that squanders some people's potential, etc.) that, if the system finds some solutions to them, it will function more effectively. By doing this, it helps the system to correct itself. These are the reasons why we ever more frequently see the critique of capitalism on the system's propaganda apparatus.

Leftism describes "capitalism" as a social system that has been intentionally designed and created by a certain social class (bourgeoisie, capital-owning or ruling class, economic elites, etc.). And it claims that this social class is now consciously perpetuating "capitalism" to the detriment of the other classes in society. Therefore, it must be possible for the exploited classes to destroy "capitalism" and build another social system in its place just like the present ruling classes have done with "capitalism." Socialist leftists assume that it is possible to control consciously the development of a society; a social class, a certain segment of the society (the proletariat, the working class, etc.), or any indefinite collective "we" can create a desired social system based on a desired goal. This cannot be done, however, because human societies are complex systems. Complex systems are composed of many components that interact with each other. It is impossible to know the exact relations among these components and the consequences that would result from interfering with them. For this reason, we cannot design on paper a plan of an ideal society and successfully implement this plan in real life. Consciously controlling the development of a society is impossible. On the other hand and related to this, it wasn't the bourgeoisie, ruling classes, or any other "vile" people who created "capitalism". Because nobody can create consciously a certain type of social system. Societies evolve following mechanical, unconscious, and uncontrollable processes. The phenomena that are regarded as the main features of "capitalism" have evolved spontaneously without conscious design during the development of human societies. They are the results of the changes that occurred in the infrastructural components of human societies which in turn caused changes in structural and superstructural components.

The Three Levels of Human Societies: Infrastructure, Structure, Superstructure

The elements that constitute human societies or cultures can be classified under three categories or levels: infrastructure, structure, and superstructure.

Infrastructure consists of the technological tools and the rest of the material elements that constitute a human society, including people (demography), the artificial environment it creates and controls, and those spaces, materials, and energy human societies take from wild Nature and use. Technological tools are, among other things, steam, internal combustion, and diesel engines that transform chemical energy to kinetic energy; steam turbines that produce electricity; transformers, connection lines that distribute electricity; vehicles that are used in transportation such as ships, tankers, automobiles, trucks; highways, bridges, viaducts that these vehicles travel on; communication and information processing tools such as computers, mobile phones, satellites, cell towers, and deep ocean cables that constitute the bulk of the *Internet* network; pipelines that carry oil and natural gas. The physical environment is composed of the natural resources and the artificial things that are built by human societies: land and water used in agriculture; fossil fuels such as oil, natural gas, and coal; the fauna and flora the society uses (domestic animals, crops, or the wild species that a society exploits); buildings, cities, roads, shopping malls, parking lots, etc.

Structure signifies the organizational framework of society. Family structures such as extended or nuclear families; the roles people assume within these family structures based on their age and sex; the classes within the society and their positions relative to each other; the types of property ownership; the political structure of the society (states and their bureaucracy, the institutions of the state, the way these institutions are organized, etc.); the organizational structure of the corporations, their hierarchies; etc. In short, relations among people, their roles in society, and the resulting hierarchies (these hierarchies mean that people have different conditions in accessing wealth and different positions in the managing hierarchy) that constitute the social organization, the so-called "social order".

Superstructure refers to the ideational aspects of a society. Ideologies, beliefs, and values that are prevalent in society: religious or non-religious beliefs, scientific theories, moral values, political ideologies, literature, the contents of the work of arts, etc.

In the long run and broadly speaking, infrastructure determines the structural and the superstructural levels of society. All these three levels might have some effects on each other, but in the long run and the broadest terms, what shapes the structural and the superstructural levels of the societies is their infrastructure. We explain why this is so in the section below.

The Deterministic Power of Infrastructural Factors

Infrastructural factors have deterministic power because human societies are subject to unchangeable physical laws. They need energy, materials, and space to feed their populations and conduct their activities. These needs drive them to certain activities pertaining to acquiring these needs, creating their motivation to act in certain ways and achieve certain ends. Without the necessary energy, materials, and space they would collapse. People can imagine whatever they want, but without the necessary resources and the technology to acquire and process them, ideas and imaginations amount to nothing in the real physical world. For this reason, the limiting factors in the existence and development of societies are infrastructural factors. Human societies contact Nature with their technologies and the series of changes that shape the other features of the societies start from this contact point. All the other aspects of human societies (their organizational and ideational features) spring from the relationship between Nature and their physical technological means.

Societies, with the aid of technology, can increase the amount of energy and materials they acquire from Nature. They need to use more powerful, efficient, or altogether new technologies to increase these amounts. However, we cannot create miraculous technological advancements and increase the number of resources available without creating consequences in Nature which in turn affect negatively the functioning of societies and increase the marginal cost of using these technologies. Technological development is gradual and takes time[5], and every new technological advance needs to be integrated into a complex system (the existing social system and the ecosystem in which the social system exits) which is composed of numerous components. Social systems have inertia, and as their complexity increases their inertia also increases. As social systems get bigger and acquire more and more components, they become more bulky. It gets more difficult for them to change course. Think about their energy infrastructure. It is a complex network with power plants, pipelines, and electrical grids. It is not so easy to adapt them to a new energy source. As social systems get more complex, they become like big ships. It becomes more difficult to steer their direction. As a result, technological advances cannot change dramatically their current functioning. For this reason, game-changing technological advances are rare. Even if they occasionally come, they could only postpone some of the physical limits so far, creating bigger and deeper problems in the end.

[5] When we say that technological development is gradual and takes time, we don't mean the number or diversity of technological tools that are invented in a given period. Measured in this way, the speed of technological development in the last 200 years has been much more rapid than it was before this period. What we mean here is that the natural constraints that hang over human societies cannot be lifted suddenly by technological development. Even if it could be possible to move forward some of the present natural limits through advancements in technology, we would encounter other limits that would even be harder to surpass.

Human social systems have a tendency to get bigger and more complex. They tend to increase the amounts of energy and materials they use and spread their functions geographically. As Marvin Harris points out,

Cultural evolution has had three main characteristics: escalating energy budgets, increased productivity, and accelerating population growth. (1) Over the long haul the amount of energy per capita and per local system has tended to increase. Cultures at the band level of development used less than 100,000 kilocalories per day; cultures at the level of tropical forest slash-and-burn farming villages used about a million per day; neolithic mixed dry-farming villages, about 2 million per day; the early irrigation states of Mesopotamia, China, India, Peru, and Mesoamerica about 25 billion per day and modern industrial superstates over 50 trillion per day. (2) Production efficiency, measured as energy output per unit of human labor has also increased, rising, for example, from about 10 to 1 among hunters and gatherers to 20 to 1 among swidden farmers to 50 to 1 among irrigation agriculturalists. (3) And human population has increased. There was a global density of less than 1 person per square mile in 10,000 B.C. Today there are over 65 persons per square mile. Settlements grew from 25 to 50 persons per band; 150 to 200 per slash-and-burn village; 500 to 1,500 per neolithic mixed farming village. By 200 B.C. there were more people living in the great preindustrial oriental empires than in all the world ten thousand years earlier.[6]

Social systems tend to develop and become more complex (more occupational and geographical specialization, more strict and diverse hierarchies, more sophisticated and diverse technological tools, more geographical extension and increased intensity of the functions of the social systems, etc.) not because it is good for humans and they desire it to be so, but because three reasons below "push" them to greater complexity.

1. The reproductive capacity of humans is greater than their capacity of acquiring food from Nature. For this reason, human societies tend to reach the carrying capacity of a given ecosystem provided by a technological level. Their population reaches a level that cannot be sustained by resources that can be acquired from Nature with a given level of technology. When this happens, certain manifestations of crises start to happen: famines, epidemics, wars (civil or external), uprisings, increased levels of infanticide, etc. To prevent these pressures and/or an all-out collapse, societies sometimes try to increase the amount of energy and materials they acquire from Nature with more sophisticated technologies.

2. Human societies are in a Darwinian competition with each other. This is an unconscious competition that just happens regardless of the intentions of the competitors. Those societies that have the best qualities to survive are the ones that continue to exist and propagate themselves. And these qualities are ultimately about how effective societies are in acquiring energy and material resources from Nature, using these resources in their metabolism, and expanding their activities in space. Since technology

[6] Marvin Harris, *Cultural Materialism: The Struggle for a Science of Culture*, Vintage Books, 1980, p. 67.

is the most important factor in acquiring resources from Nature and processing them effectively, societies tend to seek more sophisticated technologies. Some competitors are better positioned (or position themselves better through the use of violence, etc.) to acquire material and energy resources, and they are better at developing technologies that are more effective in absorbing and processing these resources. These competitors propagate themselves to the detriment of others who are less effective in these regards. This unconscious competition among human societies pushes technological development upward.

3. Technological development and greater complexity bring their own problems. This is related to the declining marginal returns of complexity and the consequences of intervening in natural cycles. Tainter defines complexity as below:

Complexity is generally understood to refer to such things as the size of a society, the number and distinctiveness of its parts, the variety of specialized social roles that it incorporates, the number of distinct social personalities present, and the variety of mechanisms for organizing these into a coherent, functioning whole. Augmenting any of these dimensions increases the complexity of a society. Hunter-gatherer societies (by way of illustrating one contrast in complexity) contain no more than a few dozen distinct social personalities, while modern European censuses recognize 10,000 to 20,000 unique occupational roles, and industrial societies may contain overall more than 1,000,000 different kinds of social personalities.[7]

Societies increase their complexity to solve problems. However, increased complexity is subject to the law of declining marginal returns. As the complexity increases, it becomes more costly to sustain the activities the increased complexity entails. We see this phenomenon in diverse cases such as resource acquisition, information processing, and educating the members of society.

As mentioned above, human societies need energy, materials, and space to survive. They initially use those resources that are easier to acquire, extract, process, and distribute. As these more available and efficient sources deplete, societies have to use harder-to-reach and less efficient sources of energy and materials, or they need to supplement the current resources with alternative ones. That generally increases the cost (not only in financial terms but also in terms of energy necessary to acquire more energy) of resource acquisition and compels societies to develop newer technologies to reach and use the less efficient alternative resources. Another instance of declining marginal returns is information processing and educational costs. As complexity increases, society needs much more data to conduct its activities (such as records about taxation, price indices, technical information about some materials and processes, etc.) Ever-increasing amounts of data need to be collected, archived, and processed. That increases the information processing costs. Besides, modern specialized occupations need ever more specialized, highly trained personnel. It is costly to educate these people. Since these people need to pass every stage of the educational period from the most

[7] Joseph A. Tainter, *The Collapse of Complex Societies*, Cambridge University Press, 1988, p. 23.

elementary to the most sophisticated, this inevitably brings declining marginal returns. On another front, ever more complex and expanded interventions to natural cycles create consequences that negatively affect the functioning of societies. The most popular of these phenomena is the climate change. The burning of fossil fuels by all sorts of engines and turbines disrupts the natural CO_2 cycle and changes the atmosphere's chemistry. That causes climate change, and to remedy its detrimental effects, society needs to invest in newer technical "solutions" such as alternative sources of energy (solar and wind "farms," research projects on fusion power, etc.), new transportation methods such as EV cars, new ways of smelting steel, heating homes, moving planes, and container ships, etc.

Subject to these laws, societies have a tendency to increase their complexity. They develop ever more sophisticated technological tools; they acquire and process ever greater amounts of energy and materials, and expand their activities in space. That increases their demography[8], and increased demography brings more occupational specialization and stricter and more diverse hierarchies. In sum, the chain of alterations that start from the contact point of societies and Nature (i.e., infrastructural factors) percolate through their structure and superstructure. Looking into how these processes occur in real life would be more explanatory.

Hunter-gatherer societies had lower population densities, less occupational specialization, less strict hierarchies, simpler dwellings, a more restricted set of artifacts, etc. compared to the agricultural ones. That is because they depended on the wild species they found in their environments to feed themselves. In contrast, agriculturalists had the ability to produce their food. They cultivated the plants and/or fed the animals that they ate. As a result, agricultural societies acquired much more energy in the form of food from their environments than hunter-gatherer ones. That higher amount of food fed more people and created a population explosion. On the other hand, food production allowed agricultural societies to be sedentary. Sedentism and increased population resulted in higher population densities, more diverse occupational specialization, stricter hierarchies, etc. Nevertheless, we still observe different levels of complexity even among hunter-gatherer societies due to different infrastructural factors they have. Even among the hunter-gatherer societies, diverse infrastructural factors (differences in fauna and flora and different technological tools to exploit these natural features) created different levels of social complexities.

Foragers who had lived before the Upper Paleolithic must have relied on scavenging and chasing to exhaustion the herbivores so as to reach animal protein because they hadn't had the necessary tools for big game hunting that we observe in Upper Paleolithic people. That must have reduced the energy flows of these pre-upper Paleolithic forager bands, and this might be the reason why we don't observe the level of complex-

[8] This seems to hold true until a certain level of social complexity. Most of the developed countries have decreasing demographic growth and for some of them, their populations are expected to decrease in the coming decades. This demographic trend seems to be caused by modern living conditions and the availability of efficient birth control techniques.

ity during the pre-Upper Paleolithic times that we see in the Upper Paleolithic (antler and bone tools, needles, boats, oil lamps, cave paintings, etc.)

In the Upper Paleolithic, biomass-rich environments and more sophisticated hunting tools resulted in higher social complexity in certain regions. In the Moravian region of present-day Czechia, mammoth hunters built stone houses, produced a variety of stone tools, and could fire clay. Southwestern France during the Upper Paleolithic had the largest herbivorous herds in periglacial Europe. This was thanks to the climatic conditions of the place. The influence of the Atlantic Ocean in this region resulted in cool summers and exceptionally mild winters and rendered the steppelike vegetation extremely productive. These rich steppes fed large herds of herbivores. Higher energy flows provided by these herds sustained a high local density of human population and "allowed at least some degree of sedentism over a substantial part of the annual cycle."[9] As a result of sedentism and high population density, these groups experienced "the emergence of certain individuals with increasing status or authority to organize and coordinate the activities of other members of the group."[10]

Comparing the Indians of the Pacific Northwest and the Mbuti Pygmies may show us how infrastructural factors influence social complexity in more recent hunter-gatherer societies. Modern foraging populations had very diverse population densities ranging in three orders of magnitude from the minimum of 1 person/100 km^2 to several hundred people/100 km^2. These differences in population densities were the result of different natural habitats and food acquisition techniques (i.e., differences in infrastructural factors).[11] In the Ituri forest where Mbuti live, the population density –including both Mbuti and their sedentary agriculturalist neighbors– is less than 3 persons per km^2.[12] In contrast, "The Northwest Coast was densely populated when Europeans first made landfall in the 18^{th} century. [...] Early historic sources indicate that many winter villages had hundreds of inhabitants."[13] Higher population densities result in stricter hierarchies, more diverse occupational specialization, more varied artifacts, more complex dwellings, etc.

The Pacific Northwest, with abundant sea mammals on its shores, sustained one of the highest foraging densities. Without resorting to agriculture, foraging people of this area created coastal villages with large houses relying on near-shore hunting of sea mammals. With their abundant supply of easily worked cedar, they built "walled and roofed large, weatherproof, and ornate buildings with gabled roofs, as impressive as

[9] See, Paul A. Mellars, *The Ecological Basis of Social Complexity in the Upper Paleolithic of Southwestern France,* Department of Archaeology Cambridge University, 1985.

[10] Ibid.

[11] Vaclav Smil, *Energy and Civilization: A History*, MIT Press, 2018, p. 28.

[12] "The Mbuti of Zaire", *Cultural Survival* (*[[https://www.culturalsurvival.org/publications/cultural-survival-quarterly/mbuti-zaire][https://www.culturalsurvival.org/publications/cultural-survival-quarterly/mbuti-zaire]*).

[13] Elizabeth Prine Pauls, "Northwest Coast Indian", *Encyclopaedia Britannica* (*[[https://www.britannica.com/topic/Northwest-Coast-Indian][https://www.britannica.com/topic/Northwest-Coast-Indian]*).

many European wooden buildings."[14] According to Coon, such a house was inhabited by several families. Indicating the existence of hierarchy and specialization in this foraging society, "the highest-ranking member, whether or not a chief, occupied the right rear corner, and the other positions followed protocol."[15] Coon remarks that what made possible this elaborate type of habitation was "ample supply of food and the availability in abundance of what is probably the world's best timber."[16] Both infrastructural features.

Specialization and hierarchy (differences in access to material wealth and power in society) are two indicators of complexity. Specialization and hierarchy generally correlate with the abundance of energy and material resources. Coon says that "two conditions foster masculine specialization: a surplus of food adequate to free specialists from the daily food quest, and a need for their services or product among others able to pay for it."[17] The Nootka (a people from the Northwestern Pacific Coast in North America) men, for example, were specialists in canoe making, woodcarving, stone maul making, or trapping bears, deers, and elk. "[The Northwest Coast Indians] had a ruling elite that controlled use rights to corporately held or communal property." Their social organization resembled the medieval societies of Europe, China, and Japan. Social stratification had three divisions: chiefly elites, commoners, and slaves or war captives. Elites derived their social rank according to the degree of relatedness to a founding ancestor. However, social stratification wasn't limited to these three broad categories; each person had a particular hereditary status that placed him to a certain degree of status within these groups. The highest rank individuals were chiefs who specialized in political leadership; they administered the group's properties and determined many of the patterns of daily life.

In contrast to the Northwestern Indians, Mbuti pygmies represented the other edge in terms of complexity in hunter-gatherer societies. They had lower population densities, simpler dwellings and social organizations, and less strict hierarchies and specializations compared with the Northwestern Indians. They didn't have specialized political leadership positions as we observed in Nootka; older men and women made the final decisions as to when and where the camp should be moved.[18] Coon says that "[in Pygmy bands] there may be one man whom the Negroes call 'chief' because he seems to be the most facile mediator between themselves and the Pygmy band as a whole, but back in the forest his authority quickly evaporates."[19] According to Turnbull, "there was little apparent specialization [in Mbuti bands.] Everyone took part in everything [...] There were no chiefs, no formal councils. [...] There was no judge,

[14] Carleton S.Coon, *The Hunting Peoples*, Book Club Associates, 1974, p. 33.
[15] Ibid, p. 36.
[16] Ibid, p. 37.
[17] Ibid, p. 269.
[18] Ibid, p. 240.
[19] Ibid.

no jury, no court."[20] Compared to the above-mentioned elaborate wooden dwellings of the Northwestern Indians, Pygmies built simpler domed huts for habitation. The domed hut is appropriate for a nomadic forager band that doesn't have an abundant food source in a particular place because "it can be put up in no more than two hours whenever there is suitable wood, and can be abandoned whenever a band of hunters decides to move camp."[21]

Leftists sometimes portray trade as something unique to "capitalism." They go so far as to describe it as a vice that has been brought on people by "capitalism." However, even people supposedly "untainted" by capitalism engaged in trade. Coon tells about an account of "a mortal battle between an inland band of Tasmanians having access to ochre, and a coastal band who had agreed to exchange seashells for the other's product. The inland people brought their ochre, but the coastal people arrived empty-handed. Men were killed because of a breach of faith over the exchange of the two materials, neither of which was edible or of any other practical use."[22] Long before "capitalism" reached those lands, the Northwestern Coast Indians traded among each other; they exchanged various goods and resources such as woven robes, copper and many other materials, shark oil, *Dentalium* shells, and canoes. These trade networks even included slaves.[23] Mbuti Pygmies, whose social structure had lesser complexity compared to the Northwestern Coast Indians, traded with their Negro villagers. They would trade meat and ivory for bananas, banana wine, pots, arrowheads, and knives.[24]

These examples show that infrastructural features of societies shape their structural features. On the other hand, they also show that private property and commodity exchanges existed in hunter-gatherer societies independent of "capitalism." They are not unique to "capitalism" as leftists claim them to be. They only have become more intense and widespread as technology develops further and further.

The first agricultural society appeared in the Middle East about ten thousand years ago. The foraging economy had reached its carrying capacity at that time because the hunter-gatherer bands had already spread through all the continents except Antarctica. There was virtually no "empty" space to go for a hunter-gatherer group when resources were depleted at a certain locality. The ice-age megafauna had been greatly decimated by the combined effects of hunting and climate change (the last ice age was ending at that time). The agricultural societies started to pop up independently more or less at the same time in different parts of the world if we look from the perspective of our long hunter-gatherer existence (hundreds of thousands of years). The shift to agriculture

[20] Colin M. Turnbull, *The Forest People*, Simon & Schuster, 1968 p. 110.

[21] Coon, *Op. Cit.*, p. 29.

[22] Ibid., p. 172.

[23] Ibid., p. 182; "Northwest Coast indian", *Encyclopaedia Britannica*, Subsistence, settlement patterns and housing (*[[https://www.britannica.com/topic/Northwest-Coast-Indian/Subsistence-settlement-patterns-and-housing][https://www.britannica.com/topic/Northwest-Coast-Indian/Subsistence-settlement-patterns-and-housing]*).

[24] Coon, *Op. Cit.*, p. 240.

occurred in those places where the climate was convenient for agriculture and where plant and animal species suitable for domestication existed.

Agricultural societies produce their own food. They turn suitable areas into fields to cultivate plants, and they raise domesticated animals. They use those plants and animals as food and material/energy resources. That vastly increases the energy flows of the agricultural societies compared to the hunter-gatherer ones. Higher energy flows allow higher population densities. Complex agricultural societies can feed their populations without making all of their members work directly in food production. As a result, stricter and more diverse hierarchies and occupational specializations emerge. Different classes that don't work in food production appear, such as soldiers, clergy, kings and servants, and people who undertake bureaucratic functions. Those classes who don't work directly in food production procure their food from the peasants who produce the food. They do this by instituting an organization: chiefdom at the initial stages of lesser complexity, states or empires at the higher levels of complexity. Bureaucracies, among other things, manage the finances (calculating the harvest, tracking and recording stock levels, levying taxes based on this information, etc.) Ruling strata (kings and their servants, soldiers, etc.) monopolize the violence. They subdue the support population (peasants producing the food), and ensure they pay their taxes, obey the laws, etc. They protect the realm from external attacks and attack neighboring societies to plunder or conquer their lands.

In summary, concentrated resources (especially food) create sedentism and higher population densities. When the food resources are plenty and consistent (like big and abundant schools of fish or herds of herbivores, or grains or domesticated animals), more people could feed on them. And if food resources are concentrated in a particular place, people could settle there. Sedentism allows people to accumulate wealth. Nomadic people can possess only those objects that they can carry with them, but sedentary people can generally accumulate more property than nomads because they don't need to move their property to different places. More people in a settled place means higher population density. In an environment with an ample food supply, not everybody needs to work directly on food production because a part of the total population could produce enough food to feed the whole population. These factors (concentrated resources, sedentism, higher population density) allow status hierarchies and occupational specializations to arise.

People are not equal. They have different abilities and characters. Some are better communicators and have better social skills. Some are better at convincing and organizing people. Some are more intelligent and/or physically stronger. Some have more ambition to accumulate wealth and climb the status hierarchy. When the conditions of amassing wealth and climbing the status hierarchy exist, some people do those things better than others. So, the material factors create the conditions for the hierarchies (in wealth and status) to intensify, and the fact that people have different abilities causes those hierarchies. However, the existence of hierarchies is not only due to the inequalities among people. Sedentary societies with high population densities need hi-

erarchical command structures to function. As mentioned above, not everybody works directly in food production in those societies. There are other tasks that need to be taken care of, such as calculating the harvest, tracking the stocks of food, collecting taxes, and using violence to establish order in the society or to protect it from the enemies. Societies with thousands or even millions of people could only function with a hierarchical command structure. Some should manage what other people do. People need to be convinced and forced to do things they are supposed to do and obey the rules, with force if necessary. As the complexity of society increases with technological advancement, this command structure becomes more complex. Every human society, from nomadic hunter-gatherers to the present techno-industrial society, has had hierarchies (in status and wealth) and occupational specializations. These hierarchies and specializations have become more conspicuous in today's high-tech society. Advanced production, communication, transportation, and data manipulation technologies create societies with huge populations spanning massive areas. Myriad of different tasks needs to be fulfilled for such societies to function. People need to behave with great discipline, and their actions should be coordinated because what they do is related to what others do in a long chain reaction. People should obey the laws, get a proper education, go to their work on time and do their jobs, pay their taxes, etc. Only a hierarchical command structure could make them do those things.

Complex sedentary societies not only use force (or the threat of it) to ensure order; they also use ideological legitimization. They need this legitimacy because sedentary agricultural societies brought vast differences in accessing wealth and power among their members. While some lived in material abundance as chiefs, feudal lords, high clergy, or kings, others languished at subsistence levels under the back-bending hard labor. Besides, with their higher population densities, complex agricultural societies brought together many people who were strangers to each other. These societies needed to put these people in cooperative networks so as to function and survive. They used institutionalized religions to do that. These religions portrayed all the members of the society as brothers and sisters; they claimed that an omnipotent God watched people in their daily lives and punished those who cheated, stole, or murdered; they said that the king was the representative of this God on Earth and the king's rule was the God's rule on Earth. These developments show how infrastructural factors (agricultural techniques, a climate and land suitable for agriculture, species that are susceptible to domestication, etc.) influence the structure (organizational framework of the society, different classes, and specializations, hierarchies, etc.) and superstructure (beliefs, ideological legitimizations, etc.) We mention more recent instances of this phenomenon while discussing the birth of "capitalism" and the industrial society below.

Some leftists claim that the tendency to expand is unique to "capitalism." They claim that due to its profit-seeking and capital-accumulating mechanisms, "capitalist" societies tend to expand themselves and they conquer and subjugate "non-capitalist" societies. They call this "imperialism," and portray it as something unique to "capitalist" countries; something that occurred after the advent of "capitalism." But this is not so.

Thanks to their material advantages (greater demography; specialization in different fields such as bureaucracy, military, food production, etc.; greater logistics abilities thanks to domesticated animals; etc.) agricultural societies expanded to the detriment of the hunter-gatherer societies. The latter either emulated the former and switched to agriculture by themselves, or they were conquered and destroyed by the agricultural societies. The agricultural economy spread all over the world where this economy was feasible. One example of this process was the Bantu spread in Africa. According to Jared Diamond, Bantu people "engulfed" Pygmies and Khoisan peoples. Diamond says that he uses this word (engulf) "as a neutral all-embracing word, regardless of whether the process involved conquest, expulsion, interbreeding, killing, or epidemics."[25] Bantu "engulfed" Pygmies and Khoisan peoples because they were the ones who domesticated plants and animals. And "food production led to high population densities, germs, technology, political organization, and other ingredients of power."[26] This engulfing happened in Africa before this continent fell victim to "capitalist imperialism." So, expansionism is not something unique to "capitalism."

We should emphasize that our classification of the features of societies is different than Marxim's classification. Marxism classifies the components of human societies into two groups: infrastructure and superstructure. It moves some of the elements we put under the structure to infrastructure and superstructure. Most importantly, it moves "relations of productions" (i.e., the class structure of the society, the forms of property ownership) into infrastructure and attributes to these features more deterministic power than the material factors such as technology, demography, and the physical (natural and artificial) environment a society finds itself in. According to Marxism, class structure and the ensuing class struggles shape societies. *The Communist Manifesto* begins with this sentence: "The history of all hitherto existing society is the history of class struggles." This is one of the reasons why Marxism is not really materialistic. According to Marxism, human history is progressive—morally and materially. Through class struggles, human societies are marching towards more "freedom," "equality," "abundance," etc. Oppressors and oppressed are in an inexorable conflict with each other that lead us inevitably to a "free," "equal," and "abundant" classless society. Marx and his leftist followers don't want to see this dream shattered by the objective factors[27] (the availability of energy and material resources, climatic conditions, the consequences of human activities on Nature, etc.) So, they would rather push the

[25] Jared Diamond, *Guns, Germs, and Steel: A Short History of Everbody for the last 13,000 Years,*Vintage Books, 2005, pp. 385 – 386.

[26] Ibid., p. 386.

[27] Marx's attitude towards Malthus's work is well known. He didn't want to acknowledge that population growth would inevitably lead to resource scarcity and poverty. According to Marx, resource scarcity wasn't inevitable and humanity, if it could supersede capitalism, would unleash bounty on Earth with the technologies at its disposal. It is true that by tapping on the enormous amounts of energy provided by fossil fuels, humanity vastly increased its food production (and, as a result, its population as well), and in some parts of the world reached levels of material abundance that haven't been seen before. But this doesn't mean that we freed ourselves from material factors, solved the problem

material factors to the background and give primacy to class struggle. Thus it becomes possible to believe that despite the material constraints, humanity can still build an abundant, classless society with the technologies it has. Today's environmentalist leftists still believe that we can unleash utopia on Earth with "green" technologies.

When leftists use the term "capitalism" to denote the current society that we live in, they refer to structural and superstructural components: its class structure, modes of property ownership, the market economy, financial institutions, corporations, economic theories, etc. The deterministic power of these characteristics, compared to that of infrastructural characteristics, is very low. These structural and superstructural characteristics have evolved during the evolutionary process of infrastructural change in some societies; they are adaptations of these societies to those infrastructural changes. We explain below in which environmental conditions these changes were triggered, and how they shaped structural and superstructural aspects of those societies.

According to leftists, commodity production and the trade of commodities are the essential features of a "capitalist" economy. The commodity is a product or service that is produced not for the immediate need and consumption of the producer; it is produced for the need and consumption of other people; it is produced to be sold on the market. However, again, commodity production and its trade are not unique to "capitalism." They have existed throughout human history since the hunter-gatherer times[28]. They have only become more widespread and intense, and this has happened primarily because of technological development. Beyond a given threshold, technological development imposes the production of commodities and their trade as the dominant form of economic relations. Technological advancement makes the production and exchange of commodities the dominant economic relation because it enables people to produce more than their immediate needs. In addition, technological development creates specialization. As technology advances, new needs, products, services, sectors, and professions specializing in different tasks arise. These specialized domains, in turn, have to exchange their commodities to satisfy their own requirements; they require each other's products to stay alive and perpetuate their operations. This network of exchanges creates the market (i.e., "capitalism").

Different specializations and social classes based on these specializations greatly intensified in number and intensity shortly after human beings started to produce their food instead of collecting it directly from Nature as they had done during their hunter-gatherer existence. Food production increased the food resources of society. And cereals were especially suitable to store. That paved the way to civilization. It became possible to feed the population without making the whole population work on food production. As technology advanced and social complexity increased, the ratio of the people that worked directly in food production decreased further. This created

of overpopulation, and that today's levels of consumption could go on indefinitely. Most important, the massive increases in human population and consumption damaged enormously wild Nature.

[28] See footnotes 23 and 24 for examples and references.

different social classes with diverse functions in human societies such as kings, soldiers, bureaucrats, peasants, clergy, artisans, etc. The continuing development of technology created new needs, and new economic sectors; it increased the specialization further still. Increased specialization, in turn, caused more diffuse and intense commodity relations. Therefore, the production and exchange of commodities (trade networks and market economy) that are regarded as the hallmarks of "capitalism" began to take shape gradually with the development of technology. They already existed in the times that are regarded as pre-capitalism. As we said above, the exchange of goods has been a part of human history since the hunter-gatherer times. In Antiquity and the Middle Ages, there was trade among different nations as well as among people inside those nations.[29] Since the end of the Middle Ages and the beginning of modern times, commodity exchange and market relations have greatly intensified and their geographical extent enormously expanded. Some complex human societies expanded their operations to newly discovered continents and included those lands in the trade networks, and human labor itself became more and more a circulating commodity that could be traded in the market. These developments were triggered by ecological, geographical, and technological conditions that were unique to Western Europe in those times. Let's examine what they were.

The Birth of "Capitalism"

Throughout history, Europe's political structure was characterized by the absence of central authority and despotic states that could dominate the whole continent. Compared with the other parts of the world, such as Egypt, India, and China, no single central authority dominated a very large part of the agricultural zone in Europe. There was always[30] a plurality of different groups and states that existed in competition. Even within the realms of particular rulers, there were alternative and rival bases of power (e.g., feudal lords, autonomous city administrations, etc.) that limited the authority of kings. Feudalism in Europe provides a good example of this European characteristic. After the collapse of the Roman Empire, old Roman provinces transformed themselves into feudal kingdoms in Western Europe. Under feudalism, manors were the center of the agricultural economic activity. Manors consisted of a fortified manor house in which the lord of the manor and his dependents lived and administered a rural estate. A population of laborers worked the surrounding land to support themselves and the lord through rainfed agriculture. This feudal aristocracy constituted a balance to the authority of central governments. On the other hand, there were independent mer-

[29] See the article on Roman trade in Wikipedia: *[[https://en.wikipedia.org/wiki/Roman_commerce][https://en.wikipedia.org/wiki/Roman_commerce]* For the medieval times, see the Wikipedia article on Hanseatic League: https://en.wikipedia.org/wiki/Hanseatic_League

[30] Even the Romans were not an exception. Roman Empire was a Mediterranean empire incorporating only southern Europe and lasted for only a fraction of European history.

chants in the cities of medieval Europe who would gradually accumulate wealth and political power.

This European characteristic is due to its ecology and physical geography. These ecological and geographical characteristics set Europe apart from other zones of civilizations in Eurasia. Europe has a puzzle-like geography consisting of different parts separated by mountains and sea. The Italian Peninsula is separated from central Europe by the Alps, the Iberian Peninsula is separated from the rest of Europe by the Pyrenees, and the Scandinavian Peninsula is separated from the continent by the Baltic Sea. The British Isles are islands. The big rivers and dense forests of Europe constituted obstacles for mass troop movements. In contrast, Southwest Asia, East Asia, and the north of the Indian subcontinent have great open plains that facilitated rapid troop movements and made imperial power projection easier. These geographical characteristics of Europe are among the factors that made the concentration of autocratic power at the expense of other actors (e.g., aristocracy, city administrations, or populace in general) more difficult.

As a result of Europe's rainfall patterns, rainfed agriculture rather than intensive irrigation farming was the norm on the continent. In river valley civilizations (such as China, India, Egypt, or Babylonia), agriculture was dependent on the water provided by big rivers, and the population was concentrated in those river valleys. In contrast, the population was dispersed throughout Europe rather than concentrated in river valleys. Europe had a much lower population density compared to the river valley civilizations. This settlement pattern affected the political structure. In big river valleys, to use the water provided by rivers, it was necessary to accumulate and direct it by dams, pools, irrigation channels, etc. These constructions required massive organized worker armies to build and keep them in operation. Only big, centralized, hierarchical empires could organize these worker armies. It was possible to feed large and dense populations using such an agricultural system. At the same time, only large populations could provide the armies of workers that built and maintained these vast networks of irrigation systems. In rainfed agriculture, the melting of the snow and rains directly provided the water necessary for pastures and crops. This type of agriculture cannot feed as large and dense populations as agriculture based on the water of big rivers; the population was sparse and low in Europe during the Roman times and the beginning of the Middle Ages. Since rainfall provided water to fields, centrally organized big public projects, organized tax collection systems, and big channel, dam, or road construction projects were nonexistent in Europe. One centrally dominant bureaucracy wasn't the sole undisputed hegemon of the agricultural area as in river valley civilizations. Since rainfed agriculture didn't require the organization of big labor armies, feudal kings in Europe didn't become the despots that controlled the whole economic activity. They had limited authority and political power because they were forced to share them with feudal lords. The absence of central authority and despotic states in Europe would have substantial consequences by paving the way to the emergence of independent economic actors. We will return to this point below.

Throughout the Middle Ages, various technological advances increased the efficiency of the feudal agricultural system in Europe. Higher efficiencies made possible the production of surplus food, and surplus food increased the population. However, increased population levels would push the feudal agricultural system (agriculture based on fallowing and animal-drawn cultivation with plow) to its breaking point. The introduction of heavy iron plows and the invention of the harrow and rollers brought more efficient ways of manipulating (scarifying, breaking up, and loosening) the soil. Pitchforks and rakes facilitated the collection of the hay that animals feed on, and the construction of haylofts and stables to store hay and keep the animals warm in winter played key roles in increasing the efficiencies. These technological tools were the main instruments of the agrarian systems based on fallowing and animal-drawn cultivation with the plow in Europe. This agricultural system was dependent on the optimum balance between agriculture and animal husbandry. Lands were divided into four main sections according to their use: fields where cereals were planted, hay meadows where hay was collected for winter use, pastures where animals were fed in the open when they weren't in the stables, and forests where wood was collected to be used in construction or for heating. People increased the size of their herds because they were able to collect and transport the grass more effectively using new technologies such as large scythes used with two hands and wheeled carts or wagons. They kept their animals in stables and thus produced more manure. More effective transportation technologies such as wheeled carts or wagons pulled by oxen, horses, mules, or donkeys made it possible to transport this manure to fields. More manure meant more organic matter for fields; yields increased. High agricultural yields caused the population to increase. However, as the population continued to increase, the fallow agriculture system passed beyond its optimum balance and entered into a crisis. The optimum point of the system depended on the ratio between the area that was allocated to cereal production and the area that was allocated to pasture and hay meadows. Whereas cereal was the main staple food of the human population, pasture and hay meadows were used to feed the animals. As the human population continuously increased, they allocated more and more area to the production of cereal. This, of course, decreased the area allocated for pasture and hay meadows. Smaller areas for pasture and hay meadows decreased the amount of grass that was available to feed the livestock. The decreased number and size of herds created a scarcity of manure. Lack of manure reduced crop yields. To remedy this, people further enlarged the fields of cereal; however, this only exacerbated the scarcity of manure and created a positive feedback loop causing the collapse of cereal production itself. Marcel Mazoyer and Maurice Roudart summarize this crisis below:

It is clear that the maximum capacity for a cultivated ecosystem is attained when certain proportions, the optimal proportions, among its constitutive parts are achieved. It is possible to assume that, at the end of the agricultural revolution of the Middle Ages, at the moment when cereal production and the population reached their maximum everywhere, the best proportions among cereal-growing areas, hay meadows, pastures, size of herds and forests were achieved nearly everywhere. But if the demo-

graphic growth in a particular cultivated ecosystem continues –the human population expands beyond the optimal proportions of the species that it eats (the cereals)– then it necessarily happens that there is a decline in fertility and production in that ecosystem.[31]

When a society reaches its ecosystem's carrying capacity, it shows some symptoms of distress. Europe began to show these symptoms starting in the 14th century: peasant and millenarian uprisings, the appearance of Flagellants, pogroms and massacres against Jews, the schism in the Catholic Church, the Inquisition, the practice of infanticide as a "birth" control mechanism, and unending wars.[32] There was another reaction of the European societies to this crisis that would have profound consequences. These were the geographical discoveries.

As we explained above, the societies of Western Europe, since the late Middle Ages, reached the carrying capacity of their land. Moreover, they were squeezed on the extreme Western fringe of the Eurasian land mass, and they were, among all the complex societies that had more or less the same level of social development at that time, the closest ones to the American continent. Before the geographical discoveries of the early modern era, parts of the Eurasian landmass suitable to settled preindustrial agriculture were filled with societies with more or less the same level of complexity and technological development. In those parts of Eurasia, there was an uninterrupted chain of civilizations from the Atlantic to the Pacific Ocean. The central part of the Eurasian landmass was controlled by rival civilizations (Ottomans and Persians in the Middle East and the Mughal Empire in India). For the most part, the north of this civilized belt –the vast steppes of Eurasia, the taiga, and the tundra–, wasn't suitable for preindustrial agriculture for climatic reasons. On the other hand, even when and where these lands were attempted to be settled by agrarian societies, they greatly were already home to nomadic pastoralists. These people, with their constant raids and harassment of settled communities, also made it impossible for civilization to expand into those lands. For these reasons, Western Europeans didn't have the chance to expand eastward to ease the pressure of overpopulation, so they made an attempt to venture outside and started geographical discoveries. These discoveries added the newly discovered lands and oceans to the orbit of civilization. Europeans transported their economies to the new continents. They started to colonize the American continent by bringing their domesticated plants and animals; they brought slaves from Africa. By colonizing the Americas, they sent their excess population to newly discovered lands.[33] At the Americas' east coast of the Atlantic, a new economic center developed, and it was integrated into the economies of Western Europe and Africa. This was the transatlantic

[31] For the crisis of agricultural systems based on fallowing and animal-drawn cultivation using the plow, see Marcel Mazoyer and Laurence Roudart, *A History of World Agriculture: From the Neolithic Age to the Current Crisis*, Earthscan, 2006, p. 304.

[32] Harris, *Op. Cit.*, page 259.

[33] This eased the population pressure they felt at home and prevented an all-out collapse. They earned precious time and their level of complexity continued to increase until the Industrial Revolution.

triangle. It was an intercontinental economy whose trade network consisted of diverse commodities such as fabrics, sugar, rum, slaves, and raw materials.

An independent and free merchant class seized on the full potential of this intercontinental economy. This class came into existence and found the conditions conducive to its development in Northwestern Europe because there weren't centralized despotic empires in that part of the world. Until the 14th century, in China, the speed of scientific and technological development and the social complexity wasn't behind that of Europe. However, in China, the existence of an all-encompassing central authority and its bureaucracy didn't allow any independent economic actors to thrive. There were merchants in China, but they remained under the control of the central bureaucracy organizing the economic activity; they couldn't become independent economic actors. The central bureaucracy swallowed the successful initiatives and prevented the appearance of an economic "ecosystem" in which fierce competition among different economic actors fostered scientific and technological development. In Western Europe, on the other hand, the absence of an all-encompassing central authority and the limited power of the kings allowed such an "ecosystem" to flourish. The existence of many independent economic actors created a "free market" in which these economic actors were in constant competition. These economic actors (companies, corporations, etc.) had to increase the extent of their operations; they had to absorb more energy and materials in order to perpetuate their existence. The "free market" and the ensuing competition created an atmosphere where the organizations which constantly developed and used more effective technologies survived, and others that weren't as effective were eliminated. This atmosphere enormously accelerated the rate of social and technological development. However, this competition isn't unique to "capitalism" or a special way of doing things unique to Europeans. This competition is a universal phenomenon. It is a result of the Darwinian selection operating on human groups. What is unique to Europe is that the appearance of the "free market" greatly intensified and accelerated this competition. And this, in turn, greatly accelerated the development of social complexity.

Parallel to the geographical discoveries, the crisis of the Middle Ages triggered some changes in Europe itself. As the crisis in agriculture decreased the efficiencies, profitability was reduced both for peasants and lords. As a result, feudal lords sought different sources of income. Especially in England, they started to enclose agricultural lands to provide wool to the textile industry. They turned their own lands and fallow lands that were under common use into pastures for sheep, or they applied new rotation techniques to fallow land. The enclosure movement reduced the area of land that belonged to peasants and forced them to migrate to wool fabric production sites in towns and cities.[34] These migrants constituted the labor force for the new manufacturing sector. The enclosure movement transformed the common land left on fallow into private property and paved the way for a new agricultural system that didn't utilize

[34] Marvin Harris, *Cannibals and Kings*, Vintage Books, 1978, page 257.

fallow. As some of the old fallow lands were transformed into pasture, the population of herds increased. That brought more manure, more animal power, and more of other benefits provided by animals such as meat, milk, wool, leather, etc. The remaining fallow lands were put into rotation with leguminous seeds. These plants increased the nitrogen content of the fields and made it possible to sustain and increase yields without fallow. Europe, beginning in early modern times, switched to a new agricultural system. This new system relied on the more intensive use of animal manure and leguminous seeds as a nitrogen source. It doubled the agricultural yields.[35] The increase in yields fed the increasing population and made possible the emergence of a new manufacturing/industrial sector. Industrialization depends on a vast labor power that works outside food production. Increasing yields made it possible to feed ever-expanding non-agricultural population. In the end, the agricultural population ended up constituting a tiny part of the whole population. At the same time, the production of industrial goods is only meaningful if there is a population that would consume it. Therefore, the early modern agricultural systems and the new manufacturing sector developed together and fed each other. This newly developed manufacturing sector was something different from the old artisanal economy. The artisanal economy was closely related to agriculture. It was organized to satisfy the needs of agriculture. However, starting from the early modern times, the manufacturing sector, by integrating into the "free market" and intercontinental Atlantic economy, became a second sector, beside and on top of agriculture.

To sum up, four parallel and mutually reinforcing factors unique to Western Europe gave rise to the "free market" where the trade of commodities became the main economic activity, and where different economic actors competed with each other by expanding their functions. First, the agricultural system in Europe went into a crisis during the late Middle Ages. The continent reached its carrying capacity, and European societies were unable to sustain their population levels with the old way of doing things. This situation selected and favored some social features and innovations that helped them solve their predicament. Second, Western European societies were on the Western fringes of the Eurasian land mass and, among the Eurasian complex societies, the ones that were geographically closest to the American continent. From the Pacific to the Atlantic, Eurasia was full of rival societies with the same level of complexity as the European ones. So, it wasn't possible for Western Europe to send its excess population eastward to ease the pressure. That forced them to geographical discoveries. They colonized the American continent, created an economic center there, and sent some of their excess population to these new lands. The discovery of the American continent eased the population pressure and created an intercontinental economy in which the trade of numerous commodities flourished. Third, thanks to the geographical and ecological conditions of Europe, there weren't centralized states

[35] For the first agricultural revolution of modern times, see: Marcel Mazoyer & Laurence Roudart, *Op. Cit.*, Section 8, p. 313.

with extensive bureaucracies. Because of this, economic actors independent of states appeared in Western Europe. Fourth, after the crises of the agricultural system that relied on fallow, a new agricultural system appeared in Europe. Under this system, common lands that were previously put on fallow turned into private lands; a more intense application of manure and the rotation with leguminous seeds increased the yields. Peasants who became landless emigrated to cities and towns, and they constituted the labor power of the incipient manufacturing sector. The combined effects of these four factors created the "free market."

The economic activity conducted in the "free market" demonstrates itself through certain manifestations. Independent economic actors (companies, corporations) compete to perpetuate themselves, so only those most efficient in accessing and using resources survive and thrive in the market. Making profits is their means to perpetuate and expand. The efficiency in making profits reflects the efficiency in using the inputs (materials, energy, labor power, technology, etc.) they put through their metabolisms and turning these inputs into "useful" outputs (products and services) that they sell. Because these economic actors are in constant competition, those who survive in this competition should extend their operations (absorb ever more energy and material from the outside world and turn them into useful outputs) and their magnitude (capital). Otherwise, they would be absorbed, displaced, or destroyed by other actors that are more successful in that regard. However, this competition isn't always a conscious competition; most of the time it operates unconsciously: imagine the "competition" among plants. Those plants that are more effective in propagating themselves spread to the detriment of other plants. They reach more sunlight, and mineral and water resources compared to their "rivals." In the end, they displace their "competitors." But they do all this unconsciously; the competition among plants just happens. The competition among economic actors has often also the same characteristics. It often just happens regardless of the intentions of the humans that belong to these organizations. Another important aspect of this competition is that most of the time, it doesn't involve direct physical antagonism. Economic actors that are more effective in absorbing and processing energy and material resources in their metabolism and turning those into sellable products could spread their operations in a manner that they may end up absorbing or displacing other less effective rivals without using physical coercion.

This competition isn't something unique to capitalism. It is the result of the universal Darwinian selection process that operates also in human organizations. Profits, capital, credit, debt, etc. don't motivate this process; these are only outward manifestations of a deeper phenomenon. This competition existed among humans since they began to form groups. It existed among hunter-gatherer bands, the first agricultural groups, the first states, and the agricultural empires. What is unique for early modern Western Europe is that the appearance of the "free market," the existence of independent economic actors, and their integration into an intercontinental economy greatly intensified and accelerated this competition. Because of that, the development of social

complexity also accelerated in Western Europe and opened the way that led to the Industrial Revolution.

Industrial Revolution and the Industrial System

Intensification characterizes human activity. According to Marvin Harris, "any increase in the quantity of soil, water, minerals, or plants put into a particular production process per unit of time constitutes intensification."[36] Human societies, as self-perpetuating systems, need to absorb energy and materials and transform those into output. As we said above, they have a tendency to get bigger and more complex whenever they can. This inevitably means more land, minerals, plants, and energy are put into the production process. As they use more resources, their activities begin to clash with material limits. This process creates economic damage: consumption of more resources creates scarcity in those resources, and Nature's ability to absorb the waste products of the economy and provide "ecosystemic services" to it diminishes. As a result, efficiencies decrease, and decreased efficiencies reduce profits. To escape this cycle, technological innovations that reduce costs and improve efficiency are tried to be introduced. But these technological developments result only in more expensive constant investments, ever more intensification by the rivals (they introduce their own technological innovations), enlargement of the production and consumption cycle, the re-institution of the material limits at a higher level, and basically the repeat of the above-described cycle.

The Industrial Revolution was ushered when human societies started to use the energies of fossil fuels at large scale (first coal, and later oil and natural gas). They were forced to resort to these energy resources as a result of the above-mentioned intensification cycle. The manufacturing sector in Britain became extremely dynamic due to the emergence of the "free market." Steel and glass production, ship construction, and some other manufacturing activities exhausted the wood sources of the island. Britain resorted to mass mining of coal in the 16th century to substitute wood as an energy resource. However, coal became an option only after the wood resources of the island had been exhausted because coal mining requires much more energy, labor, and investment than logging. Coal replaced traditional biomass energy (wood, dung, etc.) first in domestic heating; brick, ceramic, glass, and metal production followed afterward. Initially, coal mining was conducted only by human and animal muscle power. Human and animal muscle power dug the mines, transported coal in the tunnels, and lifted it to the surface. As mines got deeper, tunnels began to reach beneath the water table, and it became impossible to do all these things only by muscle power. Steam engines were the answer to this predicament. They were utilized to pump the water out from the mines and lift the coal to the surface. Steam engines and coal mining reinforced each other: Steam engines, by giving more power to miners, intensified coal mining.

[36] Harris, *Op. Cit.*, p. 266.

However, to power steam engines, more coal was necessary. So, steam engines intensified coal mining, and more intense coal mining made steam engines more widespread. Steam engines spread to other sectors as well with a similar intensification cycle. Steam engines increased the production capacity in factories. Increased production capacity enlarged the volume of trade and created more demand for transportation. After a certain limit, muscle power or wind power became insufficient to transport the goods. People began to use steam engines to move ships on waterways and locomotives in railroads.

This initial spark of industrialization (the integration of coal and steam engines) was followed by the use of other energy resources and the technological means that utilized them: the mass production of iron and steel with coal; internal combustion engines and oil; the mass utilization of electricity via an extended energy network; the use of fossil fuels, nuclear, solar, and wind-power to produce electricity; the creation of new raw materials from coal and oil by organic chemistry; the industrialization of agriculture by agricultural machines, artificial fertilizers, and pesticides; the globalization of the logistics networks by big container ships, railroads, and jet-engines; the birth of mass communications and computer technology thanks to electronics; and the further integration of the global techno-industrial system via the *Internet.*

As we have said above, technological development imposed the production of commodities (products and services intended to be sold in the market and not for the immediate consumption of the producer) and their trade as the dominant form of economic relations. (What is commonly called "capitalism.") We see this most spectacularly in the developments ushered by the Industrial Revolution. The industrial mode of production, powered by the energy of fossil fuels, can only be done in high volumes as mass production. Industrial agriculture cultivates huge areas with minimum human labor; it decreases the ratio of the population that works in food production. As a result, food production becomes a commodity production. Industrial production requires huge constant costs: Think about building a large factory, the necessary buildings and equipment, and the associated energy needs. Therefore, in order to be efficient, feasible, and profitable, this type of production can only be done on large scales. These factories cannot produce only for the immediate needs of their workers. They should constantly produce on massive scales for a vast market that consumes their products. Technological development increases specialization as well. As production methods and economic networks become more complex, people's role in the economy becomes absurdly narrower. They deal with the minutest parts of the production process (this is not only relevant in the manufacturing sector but also in the service sector). As people become more and more specialized, they become commodity and service consumers. All of their needs are satisfied indirectly by other specialized commodity and service producers/consumers. As technological advancement diminishes the ratio of people that work in the agricultural and manufacturing sectors, more and more aspects of people's lives become commodified. Not only do they buy their food as a commodity, but they also have to buy virtually everything else they need and pay other people

to look after their kids, tidy out their houses, cook their meals, exercise them, soothe their anxieties, entertain them, and bring all these commodities and services to their homes.

In sum, "capitalism" is an economic system characterized by the existence of a "free market," the existence of economic actors greatly independent of the state, and the production and trade of commodities (not only manufacturing and selling of material commodities but also supplying services sold as commodities). All these characteristics intensify as technological development increases production capacity and specialization. In fact, "capitalism" is the "natural" economic system of the techno-industrial society. Because, under the techno-industrial system, economic activity becomes so complex that a single actor cannot manage it following a centralized plan. "Free market" proved itself to be the most efficient economic system where modern technological conditions are prevalent. Some countries attempted to manage the economic systems of their technological societies under the command of a single actor, but these attempts resulted in failures. We will return to this below.

As we tried to show, capitalism (or, to put it more correctly, those phenomena that are usually classified under the word "capitalism") wasn't produced by a certain segment of society. It is not a result of an intentional process. It is the result of the blind, mechanistic, and impersonal interactions between Western Europe's natural, geographical, and demographic conditions and its technological infrastructure. It is not, unlike the socialist projects of the 20th century, an economic system that was planned and attempted to be realized by a clique to reach an ideal type of society. It is the spontaneous product of Western Europe's history. The existence of different classes and inequalities in property ownership in human societies, and the fact that some people work in back-bending conditions in poverty while others lead a luxurious life in abundance are not unique to "capitalism." These have been characteristic qualities of at least all sedentary human societies—the socialist attempts of the 20th century included.

The Myth of Capitalism's Alternative

Socialist leftists claim that they want to supersede "capitalism" because it is a system that is not under rational control: In "capitalism," numerous economic actors compete to maximize their profits and none of them, states included, are in a position to guide economy according to a rational plan. According to these leftists, since the economic activity in "capitalism" is organized with the sole purpose of maximizing profits without any concern for "real human needs,"[37] this system produces enormous amounts of waste.

[37] Anti-capitalist leftists often say that "capitalism" doesn't care about human needs. Some even go as far as to claim that "capitalism" is the enemy of "people." None of this is true. The techno-industrial system, and its economic subsystems, satisfy the needs of people because, at least so far, people are necessary for the system's functioning. People are cogs in the machine of the techno-industrial system,

They claim that corporations don't mind inequality, poverty, hunger, environmental problems, or wars because they only seek profits.[38] If we could replace capitalism with an economic system that would be rationally planned according to the "real human needs," we would solve all these problems, they say. This new economic system, according to them, would enable us to plan rationally the whole economic system, we would match perfectly the demand and production, and distribute the products of this economy equitably according to the "real needs of people." But they forget one "little" detail: This is a pipe dream impossible to realize. To realize this dream, we need to have an actor who would suppress all the other economic actors and take in its own hands the whole global economy, determine what the "real needs of humanity" are, and rationally plan and manage the whole global economic system according to this "real needs." Moreover, it would have to do this not for one year, or five years, or not even for 50 years, but for eternity.

After the Industrial Revolution, during the second half of the 19th century, Marxism became the dominant branch of leftist ideology. According to Marxism, human societies would switch to socialism and then to communism after "capitalism." "Capitalism" was only a stage in the development of human societies. Marxism claimed that there was a better way to organize the economic systems of the incipient industrial societies. "Capitalism" was unable to use the full potential of the new technologies the Industrial Revolution had brought because it was an economic system that had not been planned rationally. In "capitalism" different actors who were in constant competition with each other conducted economic activities. Their sole aim was to increase their profits. For this reason, Marxists said, it was impossible to plan the economy rationally under "capitalism." Since the economic activity was under the blind direction of the "invisible hand,"[39] it was impossible to achieve a balance between production and consumption,

---

and one should lubricate and maintain the cogs of a machine to run it. Anti-capitalists say that instead of providing everybody with his basic "real" needs, "capitalism" produces commodities that are not essential for the "real human needs." But the issue of "real human needs" is more complicated than as anti-capitalist leftists present it. The development of technology constantly changes what some of these "real needs" are. Technological development alters society so deeply that new technologies like smartphones, the Internet, electricity, or automobiles become necessary for a "normal" life in modern society, diminishing our individual autonomy and forcing us to use those technologies. Leftists don't see this problematic and embrace those technologies as "rights" people should have. But for most of the human history, all these recent inventions were non-existent, much less necessary.

[38] Anti-capitalist leftists prefer to ignore the fact that companies are increasingly turning into "woke" social justice warriors promoting equity. Besides, it is a well-known fact that corporations are involved in philanthropic causes such as poverty reduction, and promoting global health and education because these activities boost their public image and foster the more efficient functioning of the techno-industrial system.

[39] The concept of the "invisible hand" is a metaphor used in economic theory to describe the self-regulating nature of the market. It refers to the idea that in a free market, the actions of self-interested individuals will ultimately lead to a more efficient allocation of resources and the greater good of society, even though these individuals are not necessarily acting to benefit society, but themselves. The liberal economic theorists of the 18th century first coined this concept. Marx countered their arguments by

between supply and demand. This was inevitably leading to overproduction crises and recessions. In contrast, under socialism, a single economic actor would concentrate the direction of the economy in its hands. It would, according to Marxists, supersede the "free market," eliminate the "invisible hand," and direct the economy following a rational plan. This rational plan would manage the production according to the "real needs and demands of the people." It would eliminate the discrepancy between the demand and supply and the crises that were supposedly emanating from this discrepancy. In the new egalitarian socialist society, people would shed their "bad" characteristics such as egoism, greed, etc.; they would become unselfish and would place themselves voluntarily at the service of the "common good." Thus, the full potential of the productive forces (the technologies such as the steam engine) would be unleashed, and a bountiful, egalitarian new society would be created.

During the 20th century, these theories were tested in real life in several countries. The Soviet Union and China were the most salient examples. All these examples unanimously proved Marxism's predictions wrong. Socialist attempts to manage the economies with a central plan produced worse results than the "capitalist" economies of Western Europe and North America did. These "capitalist" economies (economies where economic activity was carried out by different actors with not much interference of the state) proved themselves to be more adapted to fostering technological development and using their resources (energy, materials, labor, etc.) more efficiently, and in the end, more capable at increasing the amount of energy and materials they use and at using it more efficiently. Contrary to socialist expectations, people didn't devote themselves to the "common good" of society. In the socialist systems of the 20th century, they continued to have those "bad" qualities that are so hated by socialists because, contrary to what leftist ideology claims, humans have a nature, and its expression cannot be changed enough by collectivistic conditioning.

When we say that socialist attempts produced worse results than Western "capitalist" economies, we are using only the criteria that would make human societies more competitive in the Darwinian struggle among each other. We don't use any of the ordinary humanistic criteria, such as material equality, happiness, etc., to evaluate these two systems. Because as we said above, what matters in the competition among human organizations is their material power: their ability to absorb and use energy and material resources for perpetuating and expanding themselves. Those organizations that are more successful at doing these will enlarge their operations and displace, absorb, or destroy other organizations that are not as successful. Or, these unsuccessful organizations, seeing their predicament, will try to emulate the more successful ones.

There are fundamental reasons why socialist attempts proved themselves to be less successful. First of all, the myths about an alternative to "capitalism" assume that

---

saying that the "invisible hand" was a myth and that the market system does not allocate resources efficiently. He claimed that a central plan would manage the economy more efficiently and prevent the problems of overproduction and underproduction that stemmed from the unregulated nature of the "free market."

we can control the development of human societies. According to these myths, we can steer society to a definite goal by following a rational plan. We can manage the minutest details of an industrialized economy according to a rational plan. However, human societies are complex systems. Our technologically advanced global modern society is the most complex human society that has ever existed. It is impossible to manage complex systems according to detailed theoretical plans and attain the desired results. Complex systems consist of numerous components that are connected with each other in a way that it is impossible to sketch out their precise nature. These interdependencies create feedback mechanisms so that one little change in one component might cause unintended consequences throughout the system. That is why we cannot calculate and know the precise consequences of our actions vis-a-vis complex systems. Therefore, we cannot plan on paper an ideal society, an ideal way of running the economy, and then implement this plan in real life. It is impossible, in the long term, to direct human societies to a desired model of society. Human history is full of examples that demonstrate the futility of long-term social planning. But the clearest and the most spectacular examples of this phenomenon are the socialist projects of the 20th century that tried to replace "capitalism" with centrally planned state economies.

The economies of human societies consist of a myriad of parameters and factors. A single actor cannot successfully manage them following a central plan. Trying to manage hugely complex economic systems according to a detailed plan produces even worse results than the absence of such a plan. Socialist systems, in order to abolish the "free market" and supersede "capitalism," have to suppress independent economic actors. Ideally, they should reduce the number of independent economic actors to a single actor that would manage the whole economy. Otherwise, "capitalism" will reinstate itself. This inevitably reduces the intensity of the competition in the economy. Competition among the independent economic actors forces them to ameliorate their processes, find more effective ways of doing things, discover new consumers, and invent new products to offer to these consumers, etc. In a competitive environment, those actors that are less dynamic, have inefficient processes, and are not creative enough to discover new products and niches are replaced by other actors that are more successful in those regards. Therefore, the efficiency of an economic system, up to a certain point, increases with the intensity of the competition that it harbors. In socialist systems, this competition is at a minimum level or even non-existent since the state tries, more or less successfully, to be the only economic actor. All the different sectors of the economy tend to be under its supervision. Those institutions that undertake different functions in the economy tend to follow its lead. In the absence of any competition, these institutions have no incentive to increase their efficiencies, create new products to increase their market share, foster technological development to beat their rivals, etc. No matter how inefficient they are, the state continues to subsidize and keep them alive.

Socialist regimes, if they want to eliminate "capitalism" and reinstate a socialist economic system, should keep the state power in their own hands; they should create

a one-party rule. They have to use this power to prevent independent economic actors from emerging. Otherwise, the "free market" ("capitalism") will gradually reinstate itself again. When a one-party regime consolidates in its own hands all the state power, it suppresses all the other independent supervisory and regulatory mechanisms that exist in a society. This situation inevitably corrupts the bureaucracy of the state and the cadres of the one party. They involve in nepotism, bribery, embezzlement, and all sorts of other corrupt practices. These practices decrease the overall efficiency of the system.

We said that "capitalist" economies are more efficient than "socialist" ones. By efficiency, we don't necessarily mean a strict dictionary definition of that word, such as thermodynamic efficiency. With regards to thermodynamic efficiency, "capitalism" has many flaws such as huge expenditures in logistics in a globalized economy or the production of ever more ludicrous commodities to entice consumers and all the associated material and energy expenditures. "Capitalism" might be squandering resources, inventing and producing some unnecessary products and services that humans don't need (this is one of the most repeated criticisms about the inefficiency of "capitalism") but precisely these characteristics make it more dynamic in fostering economic growth. Since the economic actors are in more heated competition in a "capitalist" economy, they want to reach every resource, they want to exploit every nook and cranny, they want to fill every possible niche of the economy, and even create new niches for themselves.

There might be some inefficiencies (in the strict thermodynamic sense) in capitalism, but overall, in this strict thermodynamic sense too, "capitalism" is more efficient than a centrally-planned economy. Socialist systems relied on central plans. However, in a complex industrial economy, the central plan doesn't work. It inevitably brings gross inefficiencies. In the socialist systems, virtually the whole economy was under the state's supervision: mining, energy production, manufacturing, transport, domestic and foreign wholesale trading, banking and insurance, agriculture, etc. were conducted by the state-owned firms or cooperatives under the state's control. The state managed the economic activity through bureaucratic coordination.

For example, bureaucracy determined all the prices (costs of the firms through inputs such as raw materials, labor, and machinery) and sales (incomes of the firms) of the state-owned firms. These firms didn't produce revenues; bureaucracy determined their cash flows via central planning. This created an incentive problem; the absence of real-life targets; the absence of an anchor. Not only in the sense of individual motivations but also regarding the "motivations" of the firms. Even if the firms didn't produce revenue (i.e. when they lost money), the state compensated them, and these firms continued to exist. The establishment and dissolution of firms and the appearance or disappearance of new products and new technologies were decided by direct bureaucratic control. This prevented the Darwinian selection of the market processes; precisely those selection processes that weed out unsuccessful firms.

Direct bureaucratic control is inefficient in many respects; it is extremely rigid. It could only work if the most detailed information about the past was available, the

predictions about the future were precise, and every command was faultless and carried out with impeccable accuracy. However, as anybody who has a modicum amount of common sense knows, everything in real life is the opposite of these. As Janos Kornai remarks, direct bureaucratic control caused long delays and serious losses before it adapted to changes in the needs of the population, technology, the domestic political situation, or the outside world. It provided no incentive for initiative, entrepreneurial spirit, or innovation.[40]

In the absence of a market mechanism, the managers of the socialist systems relied on quantitative targets such as production quotas to incentivize firms. The profit motive wasn't a target that was strongly encouraged by the central planners.[41] This created a peculiar bargain between the managers of the firms and central planners. Since managers didn't care about the revenues of their firms and their careers were mostly dependent on the production quotas of the central plan, they tried to obtain as much input as possible and tried to promise as low output as possible. Basically, they tried to produce as little as possible while receiving as much as possible. This caused low efficiency in the management of resources and created a shortage economy. Kornai gives a comparison of the ratio of input and output stocks in capitalist and socialist countries.[42] These figures indicate the inefficient management of resources in socialist countries compared to capitalist ones.

https://blogger.googleusercontent.com/img/b/R29vZ2xl/AVvXsEg9UG1SnQeI3SBV6imrJf3uwq

In a "capitalist" economy, different economic actors compete. They have to be successful in order to survive. If they cannot manage their operations efficiently, minimize their costs, adopt new technologies, and develop new products and markets, they will "die." Most of the time, and normally, states won't save them, and more efficient and dynamic actors will take their place. It is true that the main anchor in "capitalism" is the profit motive. Companies, first and foremost, try to maximize their profits. However, the profit motive is only an epiphenomenon that crystallizes deeper motives. When economic actors are chasing profits, they are in fact chasing more than one thing: the totality of their value chain from procuring the inputs to selling their products and how effectively they manage those operations. For example, a manufacturing company has to use its raw materials and energy inputs more efficiently. It should decrease its scrap rates, reduce its downtimes, and use its raw materials in the most efficient way

[40] Janos Kornai, *The Socialist System: The Political Economy of Communism*, Oxford University Press, 1992, p. 118.

[41] However, not even promoting profits as the chief target would solve the problem of incentives in the socialist system. Because the system would still lack decentralization, free entry, and free competition. In the absence of these, profit motive wouldn't play the role it plays in "capitalism" in forcing companies to reduce their operational costs, decrease input costs, utilize more efficient technologies, develop new products or markets, etc.

[42] Janos Kornai, *Op. Cit.*, p. 250.

possible. The same is true for the energy inputs. If it does so, its costs will decrease and this will increase its profits. It needs to use its human resources efficiently as well. It should motivate them to work correctly (without making mistakes), and also motivate them to ameliorate the existing processes. In a "free market" where there is more than one actor and these actors compete with each other, they are forced to ameliorate all of these processes so as to survive. Unlike in a socialist system, states, most of the time, won't compensate for their inefficiencies. That is why "capitalism" is much more effective in exploring the design space[43] and finding more effective ways of doing things. Jonas Kornai remarks that "all the international comparisons show that the utilization of resources and the proportion between input and output in production are worse under classical socialism than they are under capitalism."[44]

As we have tried to explain above, the components of the society that are classified under the term "capitalism" ("free market," corporations, financial instruments, types of property ownership, the class structure of the society, commodity production, etc.) have appeared spontaneously during the evolutionary process of some human societies. They are not the products of a conscious long-term plan. They are the products of the relations that these human societies had with Nature via their technological infrastructure. The socialist attempts of the 20$^{\text{th}}$ century, however, tried to "supersede" these spontaneously created elements by fiat to create their imagined "perfect" society. Their attempts were unsuccessful. Eventually, many socialist countries saw this reality by themselves and opened their economies to the global economy, ended the economic monopoly of the state, and let "capitalism" reinstate itself. Old Soviet countries and China are examples of this return and re-institution of "market economies." They saw that they were lagging behind the "capitalist" economies of the developed world, and tried to emulate their economic systems. So, through Darwinian competition, the "capitalist" economy has become the dominant economic form of techno-industrial societies. In the future, different countries may have different "capitalisms," some states may assume bigger roles in the economy than others, and the role of social welfare programs may increase or decrease. However, these real-life examples have demonstrated that, as long as modern technology exists and humans continue to be one of the main factors of the economy, "capitalism" (an economic system that to a great extent is not under a central command) will continue to be the economic system of technological societies.

What we have said just now may sound like a bold statement, but we cannot figure out an alternative economic system to "capitalism" as we define it here. As long as

[43] The concept of design space indicates all the possibilities of designs that a Darwinian process can explore. In our context, it would indicate the all possible designs of the economic actors: their organizational features, how they organize their processes, how they choose and motivate their employees, how effectively they create and market their new products, how they manage their supply chains, etc. In a competitive environment, Darwinian selection would "find" more efficient designs more rapidly than in an uncompetitive environment.

[44] Ibid., p. 293. Kornai gives some tables that demonstrate this fact. We reproduce here two of these tables (see ibid., pp. 293 – 294):

modern technology exists and humans continue to be the cogs in the social machine, what kind of an economic system could replace "capitalism?" We cannot imagine any alternative, and this could be our failure. Perhaps in a case where machines completely replace humans in the economy, an alternative economic system might emerge. We define "capitalism" as an economic system that has more than one independent and competing economic actor; an economic system in which the production and selling of the commodities in the market are the dominant economic activities instead of subsistence production and consumption. In a world where humans are completely eliminated from all economic activities, perhaps, the production and selling of commodities could cease to be the main economic activity. This could result in a more collectivistic, eusocial-like machine society in which machines cooperate seamlessly and meet the "colony's" needs collectively without resorting to market mechanisms. There could be more than one machine "colonies" that are in competition with each other, etc. However, we cannot exactly imagine the economic system of this machine society apart from making some speculations.

Moreover, even if capitalism were to be eliminated while humans are still the dominant economic actors (i.e. the replacement of "capitalism" by another economic system that would leave the techno-industrial system intact and humans will continue to be the dominant actors in this system), this wouldn't solve the fundamental problems that we face today: the destruction and subjugation of Nature, and the subjugation of the human race to an unnatural existence. As we tried to demonstrate above, "capitalism" has become the dominant economic system of modern techno-industrial societies through a Darwinian process. As long as modern technology exists, an alternative economic system could supersede "capitalism" globally only if it used this technology more efficiently and fostered its development better than "capitalism." As we have said, human organizations (nations in this particular context) are in a Darwinian competition with each other. Those organizations that extract more energy and materials from Nature and increase the scope of their operations displace, absorb, or destroy other organizations that are less successful in doing so. Those organizations that had this hypothetical alternative economic system should prove themselves better at achieving this so that this alternative system might spread. Only then, they and their economic system could spread globally by displacing or absorbing current "capitalist" human organizations. Or "capitalist" organizations, seeing that they would be losing ground, would emulate this alternative economic system. Just like those phenomena regarded as "capitalism" have spread all over the world. If this were to happen, it would mean even more intense and rapid destruction or subjugation of Nature and a more accelerated digression from those habitats and behaviors to which we are evolutionarily adapted. Because this alternative system would use technological means even more efficiently to extract resources from Nature and transform it into artificial environments. It would better develop the technological means and would further increase the damage these inflict on Nature. It would accelerate further the social complexity and move us further away from our natural habitats and behaviors.

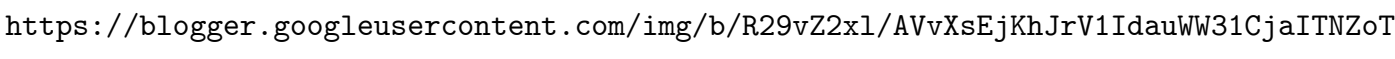
Conclusion

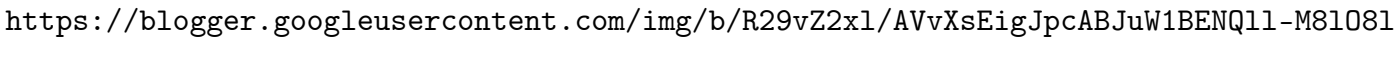
This myth about "capitalism," this boogeyman, plays a significant role in the system's neatest trick.[45] It deflects attention from the real threats wild Nature (wild human nature included) faces. It channels to irrelevant issues the potential reactions that could be directed to the techno-industrial system. It portrays the technology as a benign or at least a neutral force that could be used to build a "sustainable," "equitable," and "happy" technological society if it could be saved from the hands of "capitalism." Leftists who portray "capitalism" as the main problem come to us with tragically comic diagnoses and proposals given the severity and deepness of the problems we face. They generally propose such naive schemes as switching to wind and solar power, consuming less, giving up meat, using public transport instead of automobiles, etc. These "so radical" schemes have already become the main propaganda points of the system itself. Anti-capitalist leftists only go so far as to declare that we could only achieve these by abolishing "capitalism," "free market," "private property," etc. They always talk about alternatives to "capitalism," but apart from the tried and failed socialist systems of the 20th century, they cannot show any alternative to the current dominant economic system, and they cannot explain how we are going to end "capitalism," "free market," or "private property." They only muddy the water, create confusion, and deflect attention from the real problem. Leftists internalize the values and propaganda points of the techno-industrial system and help to promote those values and propaganda. While doing this, they believe and claim to be "revolutionary," "anti-system," "contrarian," etc. As a result, leftist values that are, in fact, the fundamental values of the techno-industrial system end up regarded as values against the techno-industrial system. People who have values and inclinations that are really against the technological system begin to see leftist talking points as the only ones that are against the system. This process absorbs the potential reactions that could crystallize into a genuine movement against the techno-industrial system. Moreover, since leftists develop their so-called criticism from the perspective of the system's values, they only point to its problems and malfunctioning, and the solutions they propose end up as mere remedies that would solve the system's problems and make it more efficient. So, they reinforce the techno-industrial system instead of really combating and weakening it.

Therefore, we call on those who value wild Nature above anything else to stop reproducing this myth about "capitalism." We call on them not to use this term or refer to this concept in their communications, messages, writings, speeches, etc. We call them to focus attention on the real problem, on the most significant threat wild Nature faces: the techno-industrial system. We call them to declare that, whatever its economic system, as long as the technological system continues to exist, it will wipe

[45] Theodore John Kaczynski, with the concept of the system's neatest trick, explains how inclinations that could work against the system are turned into values, beliefs, and behaviors that are harmless or even beneficial to it. For Kaczynski's discussion of this concept, see: Theodore John Kaczynski, "The System's Neatest Trick," in *Technological Slavery*, Feral House, 2010, p. 190.

out from the face of the world the remaining wilderness and will render real freedom impossible. If it doesn't exterminate us altogether, it will turn us into pets of the machines. And we call them to declare, despite the psychological and social burdens this entails, that through nothing short of the complete destruction of the technological system we could save wild Nature.





Karaçam
karapinusnigra@gmail.com
By Karaçam at December 02, 2023
Email ThisBlogThis!Share to TwitterShare to FacebookShare to Pinterest
Labels: capitalism, communism, complexity, darwinian selection, great divergence, human nature, imperialism, leftism, social development, socialism, the birth of capitalism, trade

Book Reviews

Book Summary and Review I: Sapiens: A Brief History of Humankind — Yuval Noah Harari

This review was updated on the 4th of March, 2023. I would like to thank Ultimo Reducto and his partner in Naturaleza Indomita, A.Q., for their suggestions and corrections.

Introduction

In this paper, we will summarize and criticize Yuval Noah Harari's book, "*Sapiens: A Brief of History of Humankind.*"[1] This book has become a sensation in recent years; it occupied the best seller lists for long time, got praise from numerous "respected" people, and turned into a widely accepted long-term history of our species. Despite the fact that Harari wants to present his book as an impartial, objective and scientific account of the history of our species without the distortion of any value judgments, and the large part of the public seems to swallow this claim, *Sapiens* is no more than an updated version of the old idealist progressivist narrative of the technological development: *Homo sapiens*, with their unique cognitive abilities, are inventing ever more advanced technologies, and marching forward to transform themselves into gods: "*Homo deus.*"

1. "The Cognitive Revolution"

Harari begins by reminding us that *Homo sapiens* were not alone in the world. There were other *Homo* species on the planet as late as 10.000 years ago, and these were also human. About 2 million years ago, the archaic human species left Africa and began to spread to other continents. They developed into different human species in those places. There were at least six different human species.

One of the defining features of *Homo* species was their big brains. Big brains bestow advantages to their owners, but they also bring disadvantages such as the large amount of energy needed to fuel those big brains. Harari doesn't give any reasons why humans

[1] Yuval Noah Harari, *Sapiens: A Brief History of Humankind*, Penguin Random House UK, 2015.

developed big brains. There are some theories as to why (such as sexual selection, the stimulative effects of tool use, and hunting), but he is right in saying that we don't know the definitive answer. Another unique treat of humans is bipedalism: walking erect on two legs. These two traits necessitate the premature birth of humans. Human babies are born vulnerable, and completely dependent on adults. This had enormous consequences on the social and familial structure of human bands. Women, on their own, couldn't raise babies; they needed supplies and protection from other members of the tribe. This necessity increased the social abilities of humans.

The position in the food chain of the genus *Homo*, until recently, was in the middle. Humankind has ascended to the top level too quickly. Because of this, neither the ecosystems nor the humans themselves adapted a hundred percent to this reality. In contrast, lions or sharks evolved into top predator positions over millions of years. Domestication of fire and tool use were key events in the ascendance of humans into the top position of the food chain.

According to Harari, despite these characteristics (big brains, bipedalism, use of stone tools, and domestication of fire) humans were still marginal creatures up until about 70.000 years ago. In the sense that they didn't have a dominant place in the world's ecosystems. About 70.000 years ago, *Homo sapiens* began to spread out of Africa. This dispersal more or less coincided with the disappearance of other *Homo* species all over the world. Two main theories try to explain why the disappearance of other *Homo* species occurred. One is the inter-breeding theory, and the other is the replacement theory. According to the former theory, *Homo sapiens* interbred with other homo species which they encountered, and they merged into single populations. The other theory states that *Homo sapiens* replaced other human species by driving them into extinction either by killing them directly or by driving them out from their habitats by using more effective hunting and gathering methods.

DNA mapping that has been conducted on Neanderthal and Denisova genes has showed that an unequal combination of the above-mentioned theories was in action in the history of the human species. "1–4 percent of the unique human DNA of modern populations in the Middle East and Europe is Neanderthal DNA," and "up to 6 percent of the unique human DNA of modern Melanesians and Aboriginal Australians is Denisovan DNA."[2] Therefore, this DNA mapping indicates that other human species went extinct contributing only a tiny percentage of their DNA to the modern human genome. *Homo sapiens* replaced them with only a little interbreeding. Besides, the fact that native human species went extinct no sooner had *Sapiens* arrived at their location is another clue that *Homo sapiens* replaced these other human species either by killing them directly or driving them out with more effective hunting and gathering techniques.

According to Harari, *Homo sapiens* made a great leap forward about 70.000 years ago. He calls this "the Cognitive Revolution." Harari claims that "the Cognitive Revo-

[2] Ibid, page 17.

lution" was the consequence of a genetic change in *Homo sapiens*. A genetic mutation that changed the wiring of the human brain. After this genetic shift, the cognitive abilities of *Homo sapiens* improved dramatically. Harari claims that we see the signs of this revolution in the artifacts and art objects created after the Cognitive Revolution: boats, oil lamps, bows, arrows, needles, symbolic artistic objects, cave paintings, etc. This story about the Cognitive Revolution has paramount importance for the narrative that Harari tries to create about the history of our species. From this point onward in the book, he explains every dramatic change in the history of our species as a consequence of the cognitive and imaginative abilities of our species. This one event, this chance mutation that rewired our brains, paved the way for all the leaps and turns that have occurred in the history of our species. This simplistic and sensationalist way of explaining the big events of our history might be a good recipe for writing an international best-seller, but it doesn't explain the real reasons behind the unrelenting trend in human history: the ever bigger complexification[3] of human societies. He doesn't mention or barely mentions the material conditions that drive this inexorable social development.[4]

It is not a proven fact that "a Cognitive Revolution" occurred 70.000 years ago. There is no evidence of a neural mutation that dramatically rewired the human brain, or that the *Homo sapiens* who lived 30,000 years ago were qualitatively different or more modern than the members of the same species who lived 200,000 years ago.[5] Instead of indicating a biological change in the species, the artifacts Harari mentions as the evidence of a "Cognitive Revolution" might be the results of cultural adaptations of human societies to the changing conditions of their environment: the manifestations of the complexification that was undertaken by humans to increase the carrying capacity of their ecosystems. But this line of reasoning is precisely the thing Harari omits in his sensationalist and simplistic explanations. He prefers to explain away the history by appealing to the imaginative abilities of the human species.

---

[3] "Complexity is generally understood to refer to such things as the size of a society, the number and distinctiveness of its parts, the variety of specialized social roles that it incorporates, the number of distinct social personalities present, and the variety of mechanisms for organizing these into a coherent, functioning whole. Augmenting any of these dimensions increases the complexity of a society. Hunter-gatherer societies (by way of illustrating one contrast in complexity) contain no more than a few dozen distinct social personalities, while modern European censuses recognize 10,000 to 20,000 unique occupational roles, and industrial societies may contain overall more than 1,000,000 different kinds of social personalities." Joseph A. Tainter, *The Collapse of Complex Societies*, Cambridge University Press, 1988.

[4] Human societies tend to get bigger if they have adequate material conditions. However, societies didn't always get bigger and more complex in the past. Some material conditions (increased cost of complexity, lack of energy and material resources, natural disasters, etc.) restricted or completely ended their development. Some of these societies even reverted to less complex levels or collapsed altogether.

[5] For a more detailed discussion about this topic, see John J. Shea, *Homo sapiens Is as Homo Sapiens* Was: Behavioral Variability versus "Behavioral Modernity" in Paleolithic Archealogy*, Current Antropology,* Volume 52, Number 1, February 2011.

Harari sees language as the most defining and most consequential characteristic of our species. Because it makes us "talk about entire kinds of entities that [we] have never seen, touched or smelled."[6] In other words, it gives us the ability to invent legends, myths, narratives, ideologies, etc. These are the things Harari regards as the engines of human history. According to Harari, religions, laws (religious or secular), corporations (Apple, Mercedes, etc.), nations, states, etc. are all imagined realities. They don't exist in the world as concrete things; they exist in our imagination and have effects on the real world only to the extent that we believe that they exist and act accordingly. And this ability to imagine imagined realities was bestowed to us by the "Cognitive Revolution." The ability to imagine "unreal" concepts enabled *Homo sapiens* to cooperate beyond its natural reference group which normally consists of at most 150 people. *Homo sapiens* can act collectively in big numbers (reaching up to milliards) by imagining these imagined realities. The capacity of imagining concepts gives *Homo sapiens* the ability to revise its behavior and transform the structure of its societies according to changing conditions. The examples Harari gives to illustrate his points are the Peugeot company and the French Revolution.

Harari says that "Peugeot SA is a figment of our collective imagination."[7] Peugeot SA is a limited liability company; it is a legal fiction. These legal entities can borrow money; can own land, machinery, and buildings; can be guilty of crimes; etc. However, according to Harari, they exist only in our imagination. But how can we say that Peugeot SA is *only* fiction or *just* an imagination? It seems that Harari is confusing the name, legal representation, or brand of an organization with its existence. Peugeot SA, as a corporation, is an organization consisting of machines, factories, buildings, workers, etc. It has to have these material components and organize them in a certain way to exist. Harari says that a disaster may kill all of Peugeot's employees, and destroy all of its buildings and machines; but Peugeot would continue to exist even after this eventuality because it can borrow money and hire new employees, buy new machines, and build new factories. He says this to show that Peugeot SA is independent of its material aspects. But these are all rhetorical tricks employed to create surprise and sensation in readers, explaining nothing. And note here what Harari says: Peugeot can hire new employees, buy new machines, and build new factories. If Peugeot was only a legal fiction and existed only in our imagination as Harari claims it to be, why it would need to reinstate its material aspects after this hypothetical disaster befalls it? Precisely because it needs these material aspects in order to exist.

Simply stating that corporations, nations, states, etc. are imagined realities created by the imaginative powers of *Homo sapiens* which were acquired after the so-called Cognitive Revolution says nothing about how these organizations have been constituted and what are the reasons that compel or direct a large number of human beings to organize themselves beyond their natural reference groups into those imagined realities.

[6] Harari, page 27.
[7] Ibid, page 32.

Of course, humans are capable of creating ideologies, narratives, and belief systems, and they use these abilities to create large organizations and motivate or coerce people to work inside these organizations. But the mere existence of this capability doesn't explain how and why these organizations have been created. What are the underlying material conditions that still drive this ever more complexification?

Harari says that "since large-scale human cooperation is based on myths, the way people cooperate can be altered by changing the myths."[8] Thus the French population almost overnight changed its myth in 1789. Yet, stating this as Harari does implies that *Homo sapiens* can change its myths, ideologies, values, etc. at will, in a voluntary fashion. But the changing of the general superstructural aspects (myths, belief systems, scientific theories, laws, etc.) of societies very rarely happens at will. It is conditioned by the changes in the infrastructural (technological tools, energy and material resources, the environmental conditions a society finds itself in) and structural (how a society organizes its hierarchies, its class structure, organizational framework of its institutions that mediate the relationships among its members) aspects of the society.[9] This was what had been happening since long before the French Revolution. The changing of the myth was an adaptation of the superstructure to the changes in the infrastructure and structure. Besides, the changing of the myth didn't happen overnight. There had been philosophers who were already advocating the new myth long before the revolution.

Harari says that to understand our nature and history, we should look into the lives of our hunter-gatherer ancestors. Evidence is scarce regarding the ancient hunter-gatherers who lived in the times when everyone was a hunter-gatherer; one way to remedy this problem is to look into contemporary hunter-gatherers. However, we can't be sure how accurately they represent the original, ancient hunter-gatherers. Since their lifestyle might have been disturbed through contact with sedentary people. Nevertheless, we can decipher some main features of the ancient hunter-gatherer lifestyle either from archaeological evidence left by them or from anthropological evidence gathered from the contemporary hunting people. According to Harari, the evidence suggests that:

· Hunter-gatherers lived in small bands of up to 150 people. In their daily life, they encountered, interacted and cooperated with a small number of people whom they knew personally.

· They lived in Nature, and they had extensive knowledge about the environment (its geographical features, fauna, flora, etc.) they lived in. They had extensive abilities and knowledge in making stone tools, moving and finding their way in the wilderness, hunting, and protecting themselves from wild animals to survive in the locality they lived in. Individually, they were much more capable and knowledgeable than a modern man is with regards to survival skills and the knowledge of their environment. They

[8] Ibid, page 36.

[9] Infrastructure, in the long-term, has determining priority over structure and superstructure. What determines and shapes ultimately structural and superstructural aspects of a society are its infrastructural features.

know most of the animals, plants, and landscape features of their environment. They know how to move efficiently in the wilderness. In short, they were much more autonomous compared to a member of a civilized society. The collective knowledge of human societies has increased, but an average member of a civilized society is an ignoramus compared to an average hunter-gatherer regarding the knowledge of survival life-and-death skills in the wilderness. Harari mentions that "the size of the average *Sapiens* brain has *decreased* since the age of foraging."[10]

· Nomadic hunter-gatherers were on the move influenced by the changing of the seasons, the annual migration of animals, and the growth cycles of plants. They usually traveled back and forth in the same home territory. In some exceptionally rich environments, there were also sedentary hunter-gatherer societies.

· Their diet was varied, consisting of lots of options depending on the locality they lived in. "They scourged for termites, picked berries, dug for roots, stalked rabbits, and hunted bison and mammoth."[11]

· Harari says that "on the whole foragers seem to have enjoyed a more comfortable and rewarding lifestyle than most of the peasants, shepherds, laborers and office clerks"[12] of the subsequent sedentary human societies. Harari is right that the foraging lifestyle was more rewarding and interesting than the lifestyles of most of the sedentary people. Because they were living autonomously relying on their own skills and capacities. They were the organizers of their own lives. Precisely these facts made the foraging lifestyle more interesting, rewarding, meaningful, etc. But we should be extremely cautious about using the term "comfortable" to define the foraging lifestyle. There lies the danger of falling into the trap of romanticizing the hunter-gatherer lifestyle. Comfort is generally understood as the absence of physical exertion and living in secure artificially controlled and stuffed places and conditions. The hunter-gatherer lifestyle requires extensive physical exertion in highly uncontrollable and risky natural habitats and circumstances.

· Harari compares the working days of sedentary societies (agricultural and industrial) with the "working days" of hunter-gatherer societies and claims that the working days of the latter were shorter than the former.[13] This comparison, if it is strictly a quantitative comparison, depends on how one defines the "working hours" of sedentary and hunter-gatherer societies. However, this comparison is inadequate in a more fundamental way. Harari uses here a modern concept of "leisure" as a criterion to evaluate the working days of the ancient hunter-gatherers. However, we can't apply this modern concept as a criterion to hunter-gatherer societies. The activities in hunter-gatherer societies that people engage in are about their immediate physical existence; they are directly connected to the most important things for an individual. Besides, these activities are conducted autonomously either individually or as a member of a

[10] Harari, page 55. See page 468, footnote 5 for the sources of this claim.
[11] Ibid, page 54.
[12] Ibid, page 56.
[13] Ibid, page 56.

small group. People need to use their intellectual and physical abilities in a varied and challenging way in order to accomplish them. That is why these activities are much more rewarding, satisfactory, and interesting than sitting in a cubicle all day while looking at pixels. These activities may take long hours to complete, but people who undertake them successfully would feel satisfied after doing them, and wouldn't need the "leisure" to fill the emptiness modern work leaves behind. Of course, it is important how many hours of a day one spends confined in a cubicle or confined to a spot in an assembly line, but what is wrong with modern jobs isn't their duration itself, but it is the way they are organized and the way they are performed. People work in those jobs without any autonomy and initiative, performing the minuscule part of a whole job which itself is generally absurd and has no relation at all with the fundamental needs of the worker. Spending a considerable part of one's life in this manner leaves behind feelings of emptiness, meaninglessness, inadequacy, powerlessness, isolation, unsatisfaction, etc. And nowadays, "leisure" is the time slot in which all these feelings are tried to be suppressed by entertainment, consumption, and all sorts of surrogate activities[14] (hobbies, intellectual pursuits, political activism, physical exercise, etc.) The modern concept of "leisure" and working hours are the two sides of the same coin, complementing each other.

· Hunter-gatherers had fewer infectious diseases because they didn't live in crowded communities or close to domesticated animals.

· Harari claims that we can't decide whether hunter-gatherer societies were warlike or peaceful. But there is enough evidence to show that violence (both to animals and to other people, especially to strangers) was an integral part of the hunter-gatherer existence.[15]

Harari makes this general summary of the hunter-gatherer lifestyle to understand our nature. But, strangely, he doesn't use the findings of this summary in the chapter (see below), where he investigates the happiness and the purpose of life.

45,000 years ago, *Sapiens* began to colonize the lands separated from the Eurasian-African land mass. They reached Australia at about that time. After the arrival of *Sapiens* to Australia, more than 90 percent of Australia's megafauna went extinct within a few thousand years. According to Harari, our ancestors were responsible for these extinction events. Evidence indicating *Sapiens'* responsibility are:

a. Some scholars blame climate change, but the species that went extinct after the *Sapiens'* arrival had survived through numerous climate change events in the past.

b. Climate change affects sea creatures and terrestrial animals equally. Oceanic fauna didn't experience extinction at the scale of the terrestrial fauna.

---

[14] For the concept of the surrogate activity, see: Theodore John Kaczynski, "Industrial Society and Its Future," ¶¶ 38 – 41, in *Technological Slavery: Volume One*, Fitch & Madison Publishers, 2019, pp. 32–34.

[15] For the evidence of war and violence in hunter-gatherer societies see, Lawrence H. Keeley, *War Before Civilization: The Myth of the Peaceful Savage*, Oxford University Press, 1996; Azar Gat, *War in Human Civilization*, Oxford University Press, 2008.

c. In other locations (New Zealand, Wrangel Island, South, and North America) where *Homo sapiens* arrived in evolutionary recent times, similar mass extinction events occurred. All these extinction events indicate a pattern. It is not probable that all of them coincided with the arrival of humans without their contribution to these extinction events.

However, the probable influence of humans on these extinction events doesn't completely exonerate the influence of climate change. Harari focuses on the responsibility of humans and doesn't mention another possibility that might have caused these extinctions: a combination of multiple factors (humans, climate change, and other environmental factors such as asteroid impacts, volcanoes, etc.)

Harari classifies the extinction events humans have caused in three waves. This is an interesting perspective that highlights what humans have done and are still doing to wild Nature. First wave extinction was caused by the spread of the foragers. The second wave was caused by the spread of the sedentary agricultural societies. We are now in the third wave of extinction events that have been caused by humans and this one is due to industrial activity. Each wave goes deeper and wider in its effects than the previous one. The third wave extinction caused by industrial activity has reached the oceans and is now decimating the mega-fauna of the oceans.

2. The Agricultural Revolution

According to Harari, the Agricultural Revolution was a disaster for the human race. It increased the total food available to humanity but led to an explosion in population, a poorer diet, strict hierarchies in the structure of the society, and a dull and unstimulating lifestyle. Harari's observations are right in assessing the consequences of the Agricultural Revolution.

Harari depicts the Agricultural Revolution as a miscalculation and as a trap that humanity was caught in, unaware of the long-term consequences. Humans were caught in the trap of eating more and more wheat.[16] As the last ice age gave way to a period of global warming, this created a climate more favorable to wheat. Humans started to eat more wheat. They needed to process wild wheat to eat it, so they carried it to their campsites. As a result, more and more wheat started to grow on the campsites and near the trails of the humans. Harari says that since wheat became more abundant in campsites where other food sources such as game were also abundant, people started to abandon their nomadic lifestyle and settle down. They discovered that they could achieve better harvests by sowing the grains deep in the ground, weeding the fields, guarding them against parasites, watering, and fertilizing them. Gradually, with each intervention on behalf of wheat, they approached full agriculture and a settled lifestyle. During this process, they increased the total amount of food they produced, but their

[16] Harari prefers to tell a story with two protagonists: wheat and humans. However, wheat is only one of the most widely used species of domesticated cereals such as rice, maize, sorghum, millet, etc.

population increased even more in proportion. At each step carrying them closer to full agriculture, they thought they were increasing the food available per person. But the increased production of food resulted in an increased population; as a result, available food per capita didn't increase, on the contrary, it decreased. Besides, the agricultural diet was worse in nutritional quality compared to the hunter-gatherer diet. At each improvement, they needed to increase the effort they put into food production. As they abandoned their nomadic lifestyle, they began to live in disease-ridden crowded settlements. In the end, their conditions became worse even though they were expending more and more effort on food production.

This trap of agriculture as Harari calls it is, in fact, characteristic of every technological development. It is the intensification process that characterizes the general tendency to the ever more complexification of human societies. Each improvement in a production process necessitates the investment of more effort, energy, and material in that process. Intensification in agricultural processes has continued until today. We are producing today more agricultural products in a given area compared to what was achieved with older agricultural methods. But we are doing this only thanks to the consumption of the huge amounts of energy obtained from fossil fuels that we use to power the big agricultural machines or to produce artificial fertilizers, pesticides, etc. The expenditure of energy per yield has enormously increased. And increased levels of agricultural yield allow us to feed ever-bigger populations, necessitating further intensification. This process of intensification (Harari's trap) isn't unique to agriculture and food production. We can see it in other domains also such as minerals and energy production, information processing, education, etc. In all those domains, the law of declining marginal returns applies. In each of these domains, as the low-hanging fruits are exhausted the returns one gets begin to decrease despite the increased effort. We need to exploit ever more difficult-to-reach and low-quality mineral and energy reserves; the data that we need to process and evaluate to maintain our ever more complex societies are in exponential growth but the returns we get from this data processing aren't increasing at the same rate; we need to train ever more specialized people for the jobs that are necessary for our highly developed societies and this means ever longer training periods and the allocation of bigger amounts of resources to education.

Harari omits to mention the previous intensification process that led to the Agricultural Revolution. He presents the Agricultural Revolution as a trick performed by the wheat in order to spread itself all over the world by trapping humanity in a vicious process of cultivating it more and more. Harari himself is playing a cheap rhetorical trick here to create a sensation in readers by employing a narrative style with two protagonists (*Sapiens* and wheat). But it doesn't help much in explaining why humanity resorted to agriculture in different places independently from each other more or less at the same time in the context of the evolutionary time frame. The hunter-gatherer economies reached their carrying capacities through a similar intensification process that has pushed later agricultural societies to more sophisticated agricultural techniques. As Harari also mentions, hunter-gatherer humans had already spread to all of

the continents of the world except for Antarctica, and the mega-fauna of these continents had been decimated after the arrival of humans. The agricultural revolutions occurred in each suitable location independently from each other when the abundant herds of big herbivores were exhausted. As a result, humans were forced to intensify their methods of food procurement by switching to agriculture.

When he discusses animal domestication, Harari contrasts the evolutionary success of a species with the individual contentment of its members. In terms of evolutionary success, which looks at only how widespread and numerous a species is, domesticated chickens, cows, and sheep are quite successful. They have spread to every part of the world, and their populations are much higher compared to wild animals. But they are paying a huge price for this since they are living miserable, horrendous lives. Moreover, their wild genetic heritage has been changed. They have become more docile, uninquisitive, meek, infantilized, and fat compared to their wild ancestors. Compared to their wild cousins who roam freely in the wilderness, their lives consist of pulling or carrying weight under the lash or standing in a confined area waiting to be slaughtered. There is an uncomfortable similarity between all this and the fate of *Homo sapiens* as he lives in more and more artificial environments. The population of the *Sapiens* and the collective power of its societies have increased, but on the individual level, an average person is living a life confined to cubicles and apartment flats chasing electronic stimuli in the developed world. To his credit, Harari also notes this similarity.

As agriculturalists began to produce and stock more food, their population increased and their settlements became more crowded. The growth of the population brought the stratification of society. Hierarchies (soldiers, priests, kings, bureaucrats, peasants, etc.) based on different functions greatly intensified in societies. As the population got bigger, the imagined realities became necessary to ensure the cooperation of a large number of people.

Homo sapiens aren't adapted evolutionarily to cooperate in large numbers. In our evolutionary history, we adapted to cooperate with the small number of people that we directly and personally knew. We were programmed via kin selection and reciprocal altruism to cooperate with this small number of people. But social organizations of sedentary societies go much beyond and require the cooperation of thousands and even hundreds of millions of people. The stability and functioning of the society depend on the success of this cooperation.

According to Harari, religions, big gods, laws, states, etc. are all imagined realities or myths that are concocted to ensure that cooperation. They are imaginary in the sense that they are concepts lodged in the neural circuitry of people without any outside existence. Harari discusses two instances of these myths: the Hammurabi Laws and the American Declaration of Independence. These two texts are cooperation manuals. They establish sacred values that guide the interactions among people. For example, the American Declaration of Independence claims that people are created equal with inalienable rights such as life, liberty, and the pursuit of happiness. According to Harari, this sentence is full of imagined realities that don't correspond with the objective

reality: People are not created, but evolved; they are not equal but are bestowed with different characteristics during this evolutionary process and are subjected to different environmental conditions. But imagining and treating them as equals are more conducive to the smooth functioning of the social machine in modern conditions. Albeit a different one, the Hammurabi Laws were also constituted on a myth. A myth which was purporting the existence of universal and eternal principles of justice (the paramount importance of hierarchy), dictated by gods. According to this, people were divided into two genders and three classes: superior people, commoners, and slaves. The laws were based on the premise that if the king's subjects all accepted their positions in the hierarchy and acted accordingly, the empire's millions of inhabitants would be able to cooperate effectively.

But the orderly functioning of human societies doesn't depend solely on the myths of these societies. It also depends on the coercive capabilities (violence, physical coercion) of those societies. People follow the norms and laws *en masse* not only because they believe in the myths of their societies, but also because they fear that they will be punished physically if they don't do so. Harari doesn't emphasize this point enough.

It seems like Harari imagines the myths (imagined realities) as some kind of a Matroska doll hanging in the air without any support. The myth of Peugeot SA resides in the myth of the French legal system, the French legal system resides in the myth of the French state, and in the last instance, all these myths come forth from the neural capacities of *Homo sapiens* that were transformed dramatically with the so called Cognitive Revolution. All human history is the succession of myths that create, transform, and shape human societies. They come forth from the imaginative powers of *Homo sapiens*, clash with each other, transform each other, and constitute the history of our species. Harari doesn't mention at all the material infrastructure (energy and material resources, demography, technological tools, etc.) of the human societies that shapes these imagined realities in the long run. Myths, as the superstructural components of human societies, are created according to the developmental level (the level of complexity) of the societies. The myths (imagined realities) are not independent of the material part of the society (its technology, its energy resources, its demography, etc.). With the advancement of technology, human societies acquire and consume more energy, they develop ever more rapid communication and transportation technologies, their demography increase and they develop more intense relationships among their own components and with other societies (communication, trade, migration, etc.) All these developments increase the collectivistic character of human societies, and the myths which accompany these societies become more collectivistic as well. We see this phenomenon in action in the myths of the Hammurabi Laws and the American Declaration of Independence. The first one envisioned a hierarchical society that classified humans into three different classes: superiors, commoners, and slaves. Nevertheless, it tried to integrate all these people into a whole, under the guidance and protection of the divine-king Hammurabi. In the American Declaration of Independence, this collectivistic character was further developed. In modern American society, all individuals

are deemed equal and bestowed with the same rights. They are individual and equal parts of a big whole, participating in it according to their capabilities.

As human societies got ever more complex, ever more data needed to be collected, archived, retrieved, and manipulated. Statistics on production, consumption, taxes; archives on ownership statutes, contracts; laws organizing the relationships among people. This vast amount of data was necessary for the functioning of the new sedentary, complex societies. After a certain threshold, this information overload became too much to be handled with mere human brain power. The Writing was invented to keep records on production, taxes, ownership statuses, laws, etc. As societies got more complex, writing systems and data collecting, recording, and manipulating technologies also developed further: from simpler number systems to Arabic numerals that use value systems on positions and the number zero. We can extend these observations of Harari to computer technology. Computer technology is a direct consequence of this process of information inflation. Data storage and processing technologies have evolved from manual human brain power calculation to mechanic calculators of the 16$^{\text{th}}$ century to the big frame computers of the early 20$^{\text{th}}$ century to the supercomputers of the 21$^{\text{st}}$ century. Data collection technologies have evolved from manual data collection to face-recognition algorithms.

Computer technology has become a necessity, just as writing became a necessity when human societies reached a certain level of complexity. Each step further in the development of data storage and processing technologies has rendered human capabilities (mere brain power in calculating or memorization) in these areas more obsolete. Sometime during the middle of the 20$^{\text{th}}$ century, the information load became so huge that it became impossible for humans to manipulate this vast data. Humans continued to program the computers that carried out data storage and manipulation as computers began to replace human calculators.[17] Nowadays, algorithms that processors use to manipulate data have become so complex that the capabilities of human programmers are now becoming inadequate to program computers. With the accumulation of vast amounts of digital data and the developments in processor technology, we now witness machines that program themselves (this is called machine learning or artificial intelligence).

In the section called "There is no justice in history," Harari discusses inequalities in sedentary human societies. He says that there hasn't been one completely egalitarian society in history. He remarks that since all complex societies have had this hierarchical structure, it seems that complex human societies require imagined hierarchies and unjust discrimination. According to Harari, these hierarchies are the products of human imagination. It seems Harari confuses the ideological legitimization of these hierarchies with the reasons for their actual occurrence and their continuation. He thinks that the reason these hierarchies appeared is that *Homo sapiens* acquired the ability to imagine

[17] There were literal human calculators up until the 60s who were responsible for making arithmetic calculations.

those hierarchies during the so-called Cognitive Revolution. With a little bit of effort, he could even attribute these hierarchies to the Big Bang.

Harari discusses the hierarchies in American society such as the distinction between rich and poor, men and women, whites and blacks, etc. and he claims that these distinctions are rooted in fictions.[18] He then talks about the ideologies that legitimize these distinctions: white supremacist ideology that claims the biological superiority of white race or some religious justifications which claim that God created people unequally, etc. But these ideological systems are only legitimizations and they, at most, help to perpetuate the existing hierarchies. They don't themselves create the hierarchies. Moreover, they are not powerful enough to preserve those hierarchies despite the changing material conditions that made these hierarchies possible and convenient. Harari says that "European conquerors chose to import slaves from Africa rather than Europe or East Asia due to three circumstantial factors."[19] First factor was that Africa was closer to the Americas than other possible locations such as Southeast Asia. Second, in Africa, there already existed a well-developed slave trade. Third, American plantations in the south were plagued by malaria and yellow fever that Africans had partial genetic immunity. These are all possible reasons why Europeans chose to import slaves from Africa to their plantations in the Americas, but they don't explain why it was Europeans instead of Africans who discovered the Americas, colonized that continent successfully and started the Atlantic triangular trade. We need to look at some deeper material conditions such as the fact that Western Europe was part of the Eurasian landmass that connected civilizations from China to Western Europe. This land connection facilitated the spread of new technologies, techniques, and ideas. The Eurasian landmass was home to the animal and plant species that were most suitable for domestication. That is why civilization started there earlier than on other continents. These and some other material conditions facilitated the more rapid complexification of the human societies which were located in the Eurasian landmass, and they acquired more material power (energy, demography, technological means) compared to the human societies of the Americas and sub-Saharan Africa. But Harari doesn't mention any of these; he prefers to make the sensationalist claim (which soothes the inferiority feelings so widespread in the techno-industrial society) that all hierarchies are rooted in fiction.

In the parts he discusses the different social roles of the sexes, he says that "patriarchy is so universal. [...] Even before 1492, most societies in both the Americas and Afro-Asia[20] were patriarchal, even though they had been out of contact for thousands of years. [...] It is far more likely that even though the precise definition of 'man' and

[18] Harari, page 150.

[19] Ibid, page 157.

[20] With "Afro-Asia," Harari refers to the continents of Asia, Africa, and Europe, because the societies in these three continents had already contact among each other before Columbus' discovery of the American continent in 1492.

'woman' varies between cultures, there is some universal biological reason why almost all cultures valued manhood over womanhood. We do not know what this reason is."[21]

Harari repeats here the leftist dogma of "patriarchy." The claim that human societies are constructed by males to oppress and exploit females; the claim that there are two distinct classes in human societies, the oppressors (males) and the oppressed (females). Harari doesn't give a clear definition of "patriarchy." But what he means by it can be gleaned from what he says on page 171. According to this, men (he should say some men) have been in those positions of political, religious, and military power. "Fewer resources are invested in the health and education of women; they have fewer economic opportunities, less political power, and less freedom of movement." These claims divide society into two distinct classes: males and females. As if *all the males*, monopolizing the highest economic, religious, and military positions of the society, oppressed and exploited *all the females*. This is not the case. Throughout history, a great part of the population has been excluded from the high-status positions of society. Not only most females but also most males. Moreover, generally it has been men who have undertaken the most dangerous and physically demanding tasks such as construction works, mining operations, wars, etc. Harari's citation from the Duke of Wellington is illuminating in this regard. The Duke talks of his soldiers as "the scum of the earth."[22] Since these "scum of the earth" were all males, it doesn't seem that they were the oppressors of a "patriarchal" society that was neatly divided in two as only male oppressors and only oppressed females. The reality was and still is much more complex than that.

Harari says that we don't know the reasons why some males have monopolized the high-status positions of society. He investigates three possible reasons and finds that all of them lack adequate explanations for this phenomenon. According to Harari, the fact that males have more muscle power than females can't explain this phenomenon. Because "there is often an inverse relation between physical prowess and social power. *Sapiens'* mental and social skills placed them at the top. Consequently, it sounds improbable that the most influential and most stable social hierarchy in history is founded on men's ability physically to coerce women."[23] Males are, on average, more aggressive than females, but this also can't be an explanation, claims Harari. Because "an aggressive brute is often the worst choice to run a war. Much better is a cooperative person who knows how to appease, how to manipulate and how to see things from different perspectives."[24] The third possible reason that attempts to explain male supremacy is:

... through millions of years of evolution, men and women evolved different survival and reproduction strategies. As men competed against each other for the opportunity to impregnate fertile women, an individual's chances of reproduction are dependent above all on his ability to outperform and defeat other men. As time went by, the

[21] Harari, page 172.
[22] Ibid, page 174.
[23] Ibid, page 173.
[24] Ibid, page 175.

masculine genes that made it to the next generation were those belonging to the most ambitious, aggressive, and competitive men.

A woman, on the other hand, had no problem finding a man willing to impregnate her. However, if she wanted her children to provide her with grandchildren, she needed to carry them in her womb for nine arduous months, and then nurture them for years. During that time she had fewer opportunities to obtain food and required a lot of help. She needed a man. In order to ensure her own survival and the survival of her children, the woman had little choice but to agree to whatever conditions the man stipulated so that he would stick around and share some of the burdens. As time went by, the feminine genes that made it to the next generation belonged to women who were submissive caretakers. Women who spent too much time fighting for power did not leave any of those powerful genes for future generations.

The result of these different survival strategies –so the theory goes– is that men have been programmed to be ambitious and competitive, and to excel in politics and business, whereas women have tended to move out of the way and dedicate their lives to raising children.[25]

According to Harari, this approach seems to be belied by the empirical evidence. Because the assumption that women's dependence on external help made them dependent on men, rather than on other women, and that male competitiveness made men socially dominant is particularly problematic. He says that in "bonobo and elephants, the dynamics between dependent females and competitive males result in matriarchal society. Since *Sapiens* are relatively weak animals, whose advantage rests in their ability to cooperate in large numbers, we should expect that dependent women, even if they are dependent on men, would use their superior social skills to cooperate among themselves, while outmaneuvering and manipulating the aggressive, autonomous and self-centered men."[26]

What has led astray Harari in finding an explanation for the fact that throughout history some men have occupied the highest social positions is that he seems to internalize thoroughly the prevailing male bashing leftist dogma. He enumerates three typical male characteristics and tries to show why these can't explain male "dominance." But he pairs these three characteristics with some supposedly corresponding "bad" side effects. Males have more muscle power, but this makes them strong brutes who don't have social and organizational skills. Males are more aggressive, but this makes them simple-minded beings who can't cooperate and see things from different perspectives. Males are competitive, but this makes them self-centered and uncooperative. But this is not the case in reality; these characteristics are not always paired with any "bad" side effects.

Because men and women have been subjected to different evolutionary pressures, they have, on average, different characteristics. This fact demonstrates itself in be-

[25] Ibid, pages 176–177.
[26] Ibid.

havioral/psychological characteristics, as well as in physical characteristics. Men are, on average, more aggressive, more competitive, more open to taking risks, and more powerful physically. But these don't mean that males can't cooperate, see things from different perspectives, act with tact, etc. *Homo sapiens* aren't bonobos or elephants. In *Sapiens* communities, it was predominantly males who cooperated to protect the band, hunt, attack other bands, etc. They were the organizers. They were the ones who formed coalitionary groups. As Harari also seems to suspect on page 178, males of the *Homo sapiens* species are not only characterized by physical strength, aggressiveness, and competitiveness, but they (on average) also have superior organizational skills and a greater tendency to cooperate than average women. But acknowledging this fact would be a great heresy in today's world.

3. Unification of Mankind

Harari says that simpler and smaller cultures were gradually coalescing into big civilizations. This is the general tendency in human history. According to him, the engine that moves history is the clash of ideas. Because every culture harbors contradictory ideas; it is this contradiction that makes them dynamic. He doesn't explain how, but this dynamism somehow compels the separate civilizations to coalesce with each other.

From 10,000 BC to the present day, separate human worlds have amalgamated; we are now living in a global human civilization that encompasses the whole world. Harari claims that this has been achieved mainly thanks to an idea, the idea of a universal order. *Homo sapiens* evolved to think people grouped into "us" and "them." "Us" was the group to that we belonged, the people immediately around us. "Them" was everyone else. At first, "us" didn't want to do anything with "them." They feared "them," and saw "them" as potential enemies. According to Harari, humans acquired the ability to supersede this mentality thanks to "the Cognitive Revolution." People acquired the ability to imagine unreal "brotherhoods" and "sisterhoods." According to Harari, three factors have played leading roles in creating the idea of a universal order. They helped *Homo sapiens* to overcome their default "us" vs. "them" mentality. These three factors were money, empire, and religion. But focusing on these three factors, Harari confuses again the real reasons for this unification, this amalgamation of the cultures, with the means employed to achieve it. Or at best, he emphasizes the secondary reasons without even mentioning the primary ones.

As societies became more complex, specialization (people who specialize in different jobs, or locations focusing on different products) increased. Barter was sufficient for conducting exchanges only up to a certain degree; after a certain threshold, it became ineffective in sustaining the exchange networks. Money, as the universal means of exchange, facilitated trade and made possible complex exchange networks. Money is the universal intermediary; every commodity became exchangeable with each other via money. These complex trade networks encompassing great areas created a universal

trade order amalgamating different cultures. The unification of Afro-Asia was achieved by the appearance of a single transnational and transcultural monetary zone encompassing this area, and eventually, the entire globe was united into a single economic and political sphere. Harari portrays money as the driver of the physical integration of human societies. But the appearance of a transcultural monetary zone was only the outward manifestation of physical integration. Afro-Asia wasn't connected to a single trade network by the idea of money, but it was connected by technological development. With technological development, human societies began to process more energy and materials in their metabolisms. They began to produce surplus commodities. Technological development increased the specializations within each given society and also among different societies. Specialized surplus products were exchanged among societies with ever more advanced transportation technologies. The appearance of money as a universal exchange mechanism accompanied this physical integration. It facilitated this integration but didn't create it. Money was a tool people used to follow and record the transactions that were occurring in this physically integrated trade network.

Harari's other agent that pushed *Homo sapiens* out of his default mentality of "us" vs. "them" were empires. Empires are political organizations that rule more than one nation. They have an aspiration to rule all of humanity. They see their culture, language, manners, laws, etc. as universally superior, and they try to assimilate other peoples into their culture. They conquer and rule other peoples using violence, genocide, and deportation. Since they englobe different peoples with different cultures in one political organization without borders, they amalgamate these different peoples and cultures into a whole. Even after the demise of an empire, its common culture persists, and empires leave behind one people that consisted of different peoples before their conquests.

Harari doesn't investigate the reasons why people organize themselves in empires or why empires have the inclination to conquer adjacent people and try to amalgamate them into a coherent whole. Presumably, if he investigated these questions, the reason he would find no doubt would be *Homo sapiens'* ability to imagine empires: That engine of history which, according to him, has been with *Homo sapiens* since the so-called Cognitive Revolution.

Empires are geographically more extensive versions of states. States also unify different cultures, kinship groups, ethnicities, etc. into bigger amalgamations. They are not qualitatively different in that regard from empires. States are formed due to different factors that push human groups to greater complexity. Increased population and demographic intensity, a consequence of food production (agriculture and animal husbandry), made managerial hierarchies a necessity in order to organize the labor force for more complex food production activities such as irrigation works. Increased economic differentiation within a society required centralized and hierarchically managed storage/redistribution of goods and products. States have a competitive advantage over less complex social forms; they dominate or absorb less complex social organizations. Social organizations, as self-propagating systems, are in a Darwinian competition

with each other. Those social organizations that are more successful in absorbing and efficiently processing the energy and material resources of their environment gain an advantage over those which are less successful in that regard. This involuntary and inevitable Darwinian competition is what drives social organizations (chiefdoms, states, or empires) to expand their activities and absorb different cultures into bigger wholes. Empires don't have any unique quality in that regard; they just represent a phase in the process of further amalgamation.

Harari's third great unifier is religion. Religion's key role in unifying humankind is that it bestowed laws a divine legitimacy. Laws are the rules that organize relations among a large number of people. Harari defines religions as entire systems of laws that claim that the laws they purport to impose aren't made by humans, but are divine in origin. Religions, according to him, claim to represent a superhuman order that is always true and valid everywhere. And they are missionaries in the sense that they try to spread this order to the whole world. Harari thinks that these characteristics make religions a unifying power amalgamating different cultures together. It is true that religions legitimize the laws and the management centers of complex human societies. They are used to ideologically condition people to the behavior patterns that are needed in complex human societies. With their insistence on the brotherhood and sisterhood of coreligionists, they create a feeling of togetherness among a large number of people who don't know each other. The belief in big gods who watch people in every moment of their lives helps to mold people's behavior to more socialized patterns. In sum, religions are means that are used by complex human societies to condition the behaviors of their members to an unnatural degree of cooperation. Unnatural in the sense that humans haven't evolved to cooperate with large numbers of people whom they don't know personally. As Harari also mentions, we tend to group people into "us" and "them" categories. And "us" is the limited circle of people whom we know personally via daily direct contact. Therefore, it is unnatural for us to live surrounded by thousands of strangers and to cooperate with them.

Harari omits to mention the transformations today's globalized technological society is causing in traditional religions. In today's highly globalized hi-tech world, classic axial religions (Christianity, Islam, Buddhism, etc.) tend to become more divisive and create religious tensions instead of fostering greater unity among people. This is because modern communication and transportation technologies create a globalized society in which people from different religions come in regular contact with each other. For this reason, classic religions are retreating into the individual belief worlds of their members instead of organizing the communal life of the society. They are more and more emphasizing tolerance among different religions. They are softening their harsh attitudes towards different social groups (such as homosexuals, non-believers, or the believers of different religions, etc.) The worldview, attitudes, beliefs, and values of the general population worldwide are being determined more and more by modern humanistic ideologies (especially by various forms of leftism). These humanistic ideologies, which have their roots in classical axial religions, are now hovering over these religions

as arbiters modifying the more archaic notions of such religions according to the needs of the globalized techno-industrial system.

Harari says that humanistic ideologies are three in total: liberal humanism, socialist humanism, and evolutionary humanism. All of these regard humans as distinct from other species, and they consider humans as the most important of beings. Therefore, they define "good" as anything that is good for humans, and that benefits humans. Liberal and socialist humanism (in fact, both are nothing but different forms of leftism that have evolved since the Industrial Revolution according to the needs of the techno-industrial system) inherit their core tenets from the Christian religion. According to Harari, liberal humanism believes that each human individual has a unique core where his humanity resides. To protect and develop this inner core and its freedom are the supreme commandments of this ideology. Socialist humanism emphasizes the equality of humans. Humanity is collective and resides within the species *Homo sapiens* as a whole. To protect equality within the species *Homo sapiens* is the supreme commandment of socialist humanism. Evolutionary humanism (these are Fascism and Nazism according to Harari) also considers humanity as the most valuable being but regards it as changeable as subject to the Darwinian evolutionary process. (Evolutionary humanism believes in a distorted version of the Darwinian evolutionary process, and it assigns value judgments to this process). It bestows itself the mission of protecting this humanity and advancing it by protecting it against the dangers of degeneracy, decay, etc.

What we need to emphasize here is that all of these humanistic modern ideologies have values that are incompatible with wild Nature. Because they regard the human species as composed of sacred beings higher and more valuable than wild Nature. All of them, one way or another, accept the notion of "progress;" they regard the ever more complexification of human societies as "progress" (i.e., an "improvement", an "elevation"). But this "progress" is only possible with the subjugation and continuous replacement of wild Nature by complex human societies. Another consequence of this "progress" (ever more complexification of human societies) is that humans are forced to live in highly organized collectivistic societies which are getting more and more different from the simpler small-scale communities they evolved in. They are living in artificial environments isolated from natural ecosystems. The overly-socialized behavior patterns that are necessary for this collectivistic society and the artificial conditions that are prevalent in this synthetic environment are defined as "progress" by humanist ideologies. The continuation of this "progress" results in the further suffocation of humans' wild nature and the suppression of their psychological and physical needs. Humanist ideologies regard this suffocation as the "elevation" of humankind.

The dominant humanistic ideology in today's modern world is leftism with its variants (Harari's liberal and socialist humanism). Extreme right-wing ideologies (Harari's evolutionary humanisms), which sometimes represent a shallow reaction to the most extreme points of the leftist ideology, also harbor values that are against the autonomy of wild Nature. They regard humans (at least some humans) as sacred beings

above Nature. They base their values on a distorted version of the evolutionary theory, and falsely claim that it is possible to interfere artificially with the evolutionary process in order to speed up the "progress" with the aim of quickly "elevating" the human species. This claim basically amounts to saying that it is possible and strongly desirable to interfere with wild evolutionary processes –which are what create wild ecosystems– in order to exalt the human species. Needless to say, this claim contains serious threats to the autonomy of wild Nature. Extreme right-wing ideologies are, at their core, collectivist ideologies despite their insistence on the continual struggle among human groups. They attribute progressive values to this struggle and regard the winners as more valuable, sacred, elevated, etc. They insist that an individual should subjugate himself completely to the benefit of his national or racial group: an artificially extended community way beyond his natural reference group. They regard technology as the most potent weapon in the competition among rival human groups. They see cultural development (i.e. ever more complexification of human societies) as "progress," a sublime value worth pursuing. Nazis, for example, claimed that they were protecting European civilization against the imminent danger of degeneration.

Harari says that the gradual unification of human communities is an inevitable result of the dynamics of history. This is a fair judgment considering the fact that human organizations have a tendency to enlarge themselves by absorbing ever more energy and materials from their environment.

He then says that, apart from this general tendency of unification, the way history evolves is not deterministic; the historical development could have happened differently, and we could be living in a different world now. The examples he gives to illustrate his point are the historical developments of Christianity and Islam. He claims that it wasn't determined from the start that these two religions would become two globally dominant monotheistic religions in the world. Nobody could have guessed and predicted in their beginnings that these two religions would become what they are today. Some other religions (such as Zoroastrianism, or Manichaeism) could be in the place of today's Christianity or Islam. It is only pure chance that Christianity and Islam have become dominant monotheistic religions of the world. Harari claims the same thing for capitalism, national states, and human rights. According to him, these phenomena have become dominant thanks to pure chance.[27] According to Harari, these historical developments that we regard as inevitable when we look into the past from the standpoint of the present, are not in fact inevitable. Because the flow of history is not deterministic; it is chaotic.

But Harari confuses two things here. First, being deterministic and chaotic are not two mutually exclusive things. A phenomenon might be chaotic in the sense that it includes countless components that interact with each other, and that we can't know exactly what all these components are and their relationships with each other. But it could be deterministic anyhow, in the sense that it may evolve only in one direction as

[27] Ibid, page 267.

a result of all the factors that interfere in its evolution. The fact that we don't know exactly what those factors are and how they interact with each other doesn't mean that this phenomenon isn't under the influence of a deterministic process so it may evolve only in one direction.

The development of societies is chaotic. Because in that process myriad of factors are included that we don't know exactly what they are, how they interact with each other, and what might be the exact consequence of their interaction. The flow of history is unpredictable (and as a corollary to that it is also uncontrollable) because of that. But this doesn't mean that it isn't deterministic at the same time, that every factor has the same power of influence on its flow, that it is only pure chance that a specific religion or capitalism or a certain political structure is predominant today.

As Harari himself acknowledges, human societies, from a broad and long-term perspective, have a tendency of getting bigger (demographically and geographically) and more complex. We have reached a point where virtually all of humanity is living in a globally integrated human society. Material factors (energy and material resources, technological tools, demography, fauna, and flora of certain environments) have deterministic priority in shaping this evolution of human societies. Because imagination isn't a constraint in this process. Humans might imagine whatever they want, but their societies need to be physically integrated in order for that tendency to realize itself. They need to have adequate technological means to sustain a certain level of integration. It might be true that some other religion could be in the place of today's Christianity. But this wouldn't change today's society in a fundamental way. Because we can with confidence claim that this other hypothetical religion would also preach basic values similar to those of Christianity such as fraternity among people, equality, meekness, compassion, cooperation, etc. Since these are the values that are necessary to integrate a large number of people who don't know each other directly and don't have the natural inclination to cooperate with each other in a cooperative network. The development of technology integrates physically human communities into larger units, and the necessary ideas and values for this unification follow this process.

Harari discusses the concept of memes. According to this concept, ideas (memes) are subjected to a Darwinian selection process. Ideas that are more suitable to spread themselves in the brains of humans are those ideas that spread more successfully and broadly and become dominant ideas. Ideas self-replicate themselves in the minds of people without any concern for the welfare of people. Harari gives the example of the arms race between India and Pakistan. According to the memetic explanation of this situation, the idea of the "arms race" has taken a more dominant place in the minds of Pakistani and Indian people instead of "peace with neighbors." For this reason, they expend a considerable amount of their wealth in an arms race instead of using the same resources on health, education, etc. This line of reasoning is the refashioned version of the old idealist approach to historical development. It attributes determining power to ideas as if they developed and spread independently of material factors. In fact, what is in competition in the case of India and Pakistan aren't ideas or memes, but

India and Pakistan themselves as states. They feel the need to arm themselves not because the idea of an "arms race" invaded the brains of their citizens, but because violence is a method that organisms/self-propagating systems (states, corporations, etc.) use in order to survive or gain advantage in the Darwinian competition. They use it to protect themselves against attacks or to attack other organisms and systems in order to monopolize resources, preempt some possible attacks, etc. Besides, what is the explanatory power of memetics? How would it explain why the idea of "arms race" spreads more successfully than the idea of "arms control" without making use of some underlying material reasons making this so?

4. Scientific Revolution

Harari claims that the growth in human power from the 16th century to the present is the consequence of the Scientific Revolution. What he means by the Scientific Revolution is a change of attitude towards knowledge. According to Harari, prior to the Scientific Revolution, people thought that the grand narratives they believed in explained everything important enough to be known. But thanks to the Scientific Revolution people realized their ignorance. They began to acknowledge their ignorance and embarked upon a systematic quest for knowledge. Harari says that modern science doesn't claim that it has all the answers to the riddles of the universe. It only claims that it has tentative best explanations of the current observations. Further observations and new theories that better explain these observations may replace existing theories. Therefore, modern science constantly renews itself and expands the knowledge of humanity.

What Harari means by the "growth in human power" are the enormous increases in the world population and GDP; the technological developments in transport, communication, construction, aviation, and space technologies; the new discoveries in biology and physics (the discovery of microorganisms, the invention of the atomic bomb); etc. And he presents all these transformations as a result of this shift of perspective toward knowledge. All human history since the 16th century is a great narrative of genius ideas following one another. He never mentions the material factors that have pushed human societies towards this complexification.

Harari says that "our current assumption that we do not know everything, and that even the knowledge we possess is tentative, extends to the shared myths that enable millions of strangers to cooperate effectively."[28] Modern technological society, as any other complex human society, needs a myth, a narrative that would bind the individuals who constitute it in a coherent whole. Since modern science doesn't presume such grand narratives, according to Harari, this might threaten the dominant ideology of modern technological society. The new findings of modern science might belie the dom-

[28] Ibid, page 282.

inant ideology.[29] According to Harari, modern humanist ideologies have two options to face this threat. They can claim that a scientific theory has found a definitive truth, and build a worldview on top of that. This is what Nazism and Communism do. Or, as liberal humanism does, they can prefer to draw a line between their narrative and the theories of modern science. According to liberal humanism, human beings are unique and they have absolute inalienable rights. But this is not what modern evolutionary biology says. It says that human beings are evolved biological organisms just like other species. But as Harari himself mentions, the line liberal humanism draws between its myth and modern science is not so sharp. The notion of "progress" is one of liberal humanism's constituent pillars. According to this, scientific and technological development is always something good; it always takes humanity to a better future; current economic, social, and ecological problems will be solved with its help.

Harari tries to be seen as neutral while discussing modern-day myths. But in fact, it is pretty obvious that he accepts the notion of "progress" and values of liberal humanism. One manifestation of this is that he attributes virtually all of the developments (social, economic, technological, scientific) since the 16$^{\text{th}}$ century to a shift in mentality (the Scientific Revolution) and the ensuing succession of creative ideas. This basically amounts to claiming that humanity, thanks to its genius ideas and new excellent mentality, has been going further in the path of progress in an accelerated fashion since the Scientific Revolution and will continue to do so in the future, and will eventually turn into a god—*Homo deus*. There is no mention of the material factors that are involved in this process. He doesn't mention at all the physical relations human societies have with Nature, and how technology acts as an intermediary in this relation. We can't hear anything about how human societies have reached the limits (carrying capacity) of their environments, and how new technologies have been employed to move these limits further in order to avoid collapse. These new technologies are rather solutions to the problems bequeathed to human societies by the previous technological development (social complexification) than they are fancy ideas that humans come up with thanks to their new perspective. They represent further steps of a *fuite en avant*, more intensive ways of doing things with more energy and materials. GDP started to increase in an accelerated fashion from the 19$^{\text{th}}$ century and the material conditions of humans also started to increase (the elimination of poverty, the increase of welfare) during this time. These developments are the consequences of the Industrial Revolution which were triggered as a reaction to the fact that Western European agricultural societies reached their carrying capacities at that time. Without the enormous concentrated amounts

[29] This is actually what happens with evolutionary biology/psychology and ecosystem sciences. Evolutionary biology/psychology, in contrast to humanist narratives, have placed humans in the animal kingdom among other species. They explained that we acquired our physical/psychological needs during the evolutionary process, and we need to live in our natural habitats to have a satisfying and fulfilling life. Ecosystem sciences have demonstrated that social complexification, Harari's "growth in human power" and humanism's "progress," destroys wild ecosystems and undermine the ground which supports that complexification.

of energy that had accumulated as fossil fuels, no amount of genius ideas would have been sufficient enough to realize the technological, scientific, and social development that has happened since then. But all these developments in turn create new problems: they create a society that is further detached from the natural living conditions of humans, and they worsen the environmental problems since they require ever more consumption of energy and materials. Harari, as an unrelenting progressivist he is, instead of admitting the first category of these problems (an artificial environment that is further detached from Nature and the natural inclinations of humans), prefers to see the prospective technological palliatives (genetic engineering, cyborgization) to these problems as the transformation of *Homo sapiens* to *Homo deus*. We will return to this point below.

As we said above, Harari tries to appear impartial with regard to modern-day narratives. He tries to present himself as an impartial observer of the history of *Homo sapiens*. But his remarks on the developments in medical technology belie this attitude. According to Harari, what the medical profession, in reality, aspires to is to realize immortality. He says that thanks to the Scientific Revolution, serious progress has been made towards this goal in recent times. In the future, new technologies such as genetic engineering and nano-robots that support the immune system will usher even bigger progress in reaching that goal. Harari says that these are all good developments.[30] But why is it a good thing that as many *Homo sapiens* as possible live an immortal life that is further detached from their natural inclinations and habitat? Especially when we think about what this immortality would entail: an even worse overpopulation, further collectivization of the society, a further deterioration of the natural immune capabilities of humans which would make them completely dependent on the medical profession, and all the negative consequences of these on wild Nature. One can only see these as good if one accepts the dogmas of modern leftist humanism.

Harari constructs an idealist narrative of history. According to him, the fact that it was Europeans who made the geographical discoveries, that they rapidly made numerous technological advances and put them into use is due to the peculiar mentality that Europeans acquired during the Scientific Revolution: "The oddity is that early modern Europeans caught a fever that drove them to sail to distant and completely unknown lands full of alien cultures, take one step on to their beaches, and immediately declare, 'I claim all these territories for my king!'"[31] Chinese didn't do these discoveries because, according to Harari, they didn't have the same mentality. Even if they had the technological capability, they didn't put it into use in a broad manner that would transform their society.

To illustrate the uniqueness of modern Europeans (the Europeans of the post-Scientific Revolution era), Harari contrasts them with past conquerors (Roman and Alexandrian Empires). Past conquerors merely expanded their territory to neighboring

[30] Harari, page 301.
[31] Ibid, page 325.

territories; they didn't venture into unknown seas and lands to claim sovereignty over them. It is true that past empires expanded their territories to adjacent land masses. Roman, Alexandrian, Ottoman, and Russian empires had the tendency of expanding their territory to neighboring territories. There are some deep reasons (apart from their own ideological legitimizations) why they had this tendency. Because they were in a competition to absorb more energy and material resources to accumulate more material capacity and gain an advantage in the context of the Darwinian competition they had engaged with other large organizations (other states or empires). Because of this fundamental and unconscious competition among large organizations, they have the tendency to enlarge their operations throughout the area that they are able to control with a given technological level.

Prior to the advent of the complex human organizations such as the agricultural empires that we mentioned above, human hunter-gatherer communities had expanded from Africa to virtually every part of the world (except Antarctica) including Australia. Of course, whereas modern Europeans knew that they were colonizing "new" continents, hunter-gatherers weren't aware of where they were going. Despite this difference, we may still ask this question: Had those hunter-gatherer communities that had expanded to every continent of the world except Antarctica also been the victims of this fever that seized Europeans during the Scientific Revolution? Or, more plausibly, as these hunter-gatherer communities had reached the carrying capacities of their environments, had they been forced by their circumstances to expand to adjacent territories? As hunter-gatherer communities colonized every part of the world where this economy was possible, this lifestyle reached its global carrying capacity. There was virtually no more empty land to expand as a hunter-gatherer. When this stage was reached, food-producing communities started to pop up independently in the most suitable locations for agriculture. Since these food-producing societies were able to produce more energy and feed bigger populations, they started to expand from their initial zones to adjacent territories and colonized virtually every suitable land for agriculture. Were perhaps these traditional agricultural societies also seized by this fever that, according to Harari, afflicted early modern Europeans?

Early modern era European discoveries and colonizations were not fundamentally and qualitatively different from the prior expansions that we mentioned above. Prior to the early modern era discoveries, the Eurasian landmass was filled with societies that had more or less the same level of complexity, the same level of technological development. There was an uninterrupted chain of civilizations from the Atlantic to the Pacific Ocean. The societies of Western Europe, since the late middle ages, reached the carrying capacity of their land. Europeans were squeezed to the extreme Western fringe of the Eurasian land mass. The central part of the Eurasian landmass was under the control of rival civilizations (Ottomans and Persians in the Middle East, Mughal Empire in India). Europeans didn't have the chance to expand eastward to ease the pressure of over-population, so they made an attempt to venture outside and started geographical discoveries. Moreover, Europeans were in a geographically

suitable place to reach the American continent. Among the societies that had similar development levels at that time, they were closest to the American continent to reach it by sea. Chinese, for example, would have needed to cross the Pacific Ocean to reach the western coast of the Americas.

Harari sees the Industrial Revolution and its consequences as the results of human ingenuity and the unique European modern mentality. Uninterrupted genius ideas and inventions that followed one another and which helped people to shape human societies and material conditions to their will at last ushered also the Industrial Revolution. Harari claims that our energy and material resources are limited only in theory; in practice, they are limitless.[32] He tries to back this claim with several examples. In the 18th century, carriage production was dependent on wood and iron. But today, we use numerous materials such as plastics, rubber, aluminum, and titanium, most of them were unknown in the 18th century and only discovered in recent decades. Whereas in the 18th century carts were produced in factories that were powered by muscle power (human and animal) and were moved by animal muscle, today's automobiles are being produced in factories that are powered by fossil fuels or nuclear energy and moved by internal combustion engines that burn fossil fuels. The conclusion Harari derives from this is that what is limited is not the energy or materials themselves, but the knowledge to acquire and transform them. It is true that throughout the technological development and the ensuing complexification of societies, humans have added new materials and energy sources to their repertoire. In terms of energy, humans have used traditional biomass since they discovered the use of fire, and they have added on this coal, oil, nuclear, modern solar panels, and wind turbines. In the domain of fossil fuels, we now exploit hitherto untapped reserves of fossil fuels such as shale deposits, tar sands, and deep ocean reserves. Wind turbines have started to invade the seas in the shape of off-shore turbines. The petrochemical industry is synthesizing new materials. But all these discoveries and inventions mean increased complexity, and they all represent a reaction to a previous intensification-depletion process. In order to reach, produce, process, and synthesize these "new" energy and material resources, we need to employ ever more complex processes and invest more energy and matter in these processes.

Humanity is using now nuclear energy, but in order to achieve this feat we need to mine uranium and enrich it (a very difficult and expensive process), build massively complex and expensive nuclear power plants, and operate those plants with utmost security (train relevant cadres, determine and implement security measures, etc.), and find a way to store the extremely dangerous and harmful nuclear waste virtually for eternity. Until today, we have continued to find new reserves of fossil fuels. But each time, they are in the places which are harder to reach (in deep oceans, in shale rocks, etc.), or they are the types that are harder to process and less energy-dense. Sunlight that reaches the earth and winds that are formed in the atmosphere may hold a

[32] Ibid, page 374.

virtually limitless amount of energy as potential, but we need to harness this energy in order to use it. And this is only possible with the expenditure of enormous quantities of energy and materials and their transformation involving complex procedures: Mining of the rare earth minerals that are used in the production of solar and wind turbines, the production of the solar panels and wind turbines themselves, their installation in remote areas and operating those as power plants, etc. The new synthetic materials that we keep inventing are also subjected to similar processes and constraints. Their production requires more and more energy and material resources, and we employ ever more complex procedures in order to produce them. Therefore, these "new" materials and energy sources aren't free products of human ingenuity that are drawn from the void as Harari wants to present them, but they are more of a response to problems that have been bequeathed to us from past intensification-depletion cycles. The use of coal was a response to the fact that wood sources were depleted in the British Islands. The exploitation of solar and wind power by modern solar panels and wind turbines is a reaction to the depletion of fossil fuel reserves, and a desperate attempt to curtail the CO_2 emissions that change the climate of the Earth. Artificial fertilizers embody a recent phase in an intensification process that has been going on for thousands of years and represent a "remedy" to the consequences of this intensification process (increased population levels and depletion of minerals in the soil and its erosion). Of course, the production and exploitation of all of these "newly discovered" energy and material resources constitute wider and deeper interventions in the wild processes which create even greater problems and force us to find even more "new" energy and material resources.

On the other hand, Harari assumes that we will always find new energy and material resources because we've so far found them. That is mere faith. It isn't certain that it will always be so. Some societies in the past couldn't find alternative energy and material resources when needed and collapsed precisely for this reason. Past societies that have developed themselves to become the present techno-industrial system have so far found new energy and material resources when or before they needed them, and they had appropriate technology in hand to use them when they found them. That only shows that they've been lucky until today. But assuming from this that their luck will continue forever is the same as expecting that species that are extant today will continue to exist forever in the future only because they've survived to the present day. That is an absurd assumption.

Harari investigates the effects of the Industrial Revolution on domesticated animals. The wild genetics of these animals had already been altered since the Agricultural Revolution. With the advent of the Industrial Revolution and the application of its techniques to food production, these species have become the raw materials of a much more mechanical and calculated process. They spend their whole lives in the production chain of industrial "assembly" lines (or, to put it more precisely, disassembly lines). As a consequence, they suffer enormous physical and psychological pains. As Harari mentions, these animals still have needs that they acquired during their wild evolution-

ary history: "This is the basic lesson of evolutionary psychology: a need shaped in the wild continues to be felt subjectively even if it is no longer really necessary for survival and reproduction. The tragedy of industrial agriculture is that it takes great care of the objective needs of animals while neglecting their subjective needs."[33]

This statement also points to the core reason for the sufferings humans endure in the techno-industrial system. The activities that humans would normally engage in order to survive and reproduce in Nature have become unnecessary in a technological society. But the need to engage in these activities is still felt by humans.

The physical and social environment *Homo sapiens* live in has been transformed very rapidly and fundamentally since the Industrial Revolution. The wild Nature where we evolved is being rapidly substituted by the artificial environment the technological system creates. The advent of the Industrial Revolution brought an even more radical departure from our natural habitat than the Agricultural Revolution did. During our life in traditional agricultural societies, humans had at least a more direct relation with the natural environment (with the sun, soil, and water), we lived in a less collectivistic society as members of a smaller group, and we lived a life that was more steady and slow and thus was capable of offering a sense of stability and trust. The social consequences of the Industrial Revolution have wiped all these away.

The industrial mode of production subjected the time, that before was organized according to the sunlight and seasons, to the rational calculation of the clock. Factories reduced people to little peons that undertake minutely defined mechanic jobs. Schools, government, and private offices also applied the same principles. Urbanization created the most unnatural form of life by bringing millions of people together in vast concrete conglomerations. The destruction of the extended families and the local small communities reduced people to masses of isolated individuals. *Homo sapiens* had lived for hundreds of thousands of years in small communities and had adapted to the lifestyle (cooperation networks, a sense of belonging to a tribe, a common culture and language, etc.) these communities provide. The rapid dissolution of these communities created a strong feeling of loneliness, isolation, and powerlessness.

According to Harari, modern technological society has encouraged people to shatter their connections with their extended families and small communities with the promise of making them "individuals:" You can marry whomever you want without asking your elders, you can do whatever job you want and settle wherever you like away from your family and traditional community. The services such as cooperation, security, food, shelter, education, etc. that have been so far provided by traditional small communities will be provided to you by the state and the market (corporations). You will be modern and free individuals by getting out of backward traditional settings. According to Harari, people accepted this bargain, shattered their connections with extended families and small communities, and became "individuals."

[33] Ibid, page 385.

Even though Harari sees this narrative as a fifth-column propaganda activity that aims to destroy family,[34] he accepts the content of this propaganda. Because he claims that modern conditions create strong individuals.[35] However, modern conditions don't create strong individuals. On the contrary, they erode individuality. Modern techno-industrial society is the most collectivistic society that has ever existed. Its members are almost completely dependent on large organizations to satisfy their most basic physical necessities. Some of them live in large metropolitan areas with millions of inhabitants reminiscent of termite colonies. They have virtually the same pleasures, values, beliefs, and worldviews that are inculcated in them by mass propaganda; their working and leisure hours are designed by technical necessities and market mechanisms; and they are followed and recorded virtually in every aspect of their lives. How can people living in these conditions be strong individuals?

5. Happiness and the Purpose of Life

Harari ventures into a discussion on happiness and the purpose of life. He says that social development and advancement in science and technology can't automatically bring happiness to people. He claims that the opposite of this idea is also not correct. What he means by "the opposite idea" is the opinion that claims that humans evolved during a period of hunter-gatherer lifestyle; that our physical and psychological needs and desires were shaped during that process; and that each further social development that moves us away from this lifestyle makes us unhappier. According to Harari, this opinion is as dogmatic as the first one because it ignores the advancements the technological development has brought such as the decline in infant mortality rate and violence, and the disappearance of large-scale famines.

Harari advises us to entertain a more nuanced view instead of these two opposite extremes. According to Harari, we shouldn't be dogmatically reactionary or dogmatically progressive while evaluating the consequences of technological development. Instead, we should evaluate the "bad" and "good" parts of each side. Despite the fact that technological development moves us away from the lifestyle that we have evolutionarily adapted to, it also brings some "positive" results.

But this "nuanced" stance Harari suggests us to take doesn't have any practical relevance and it is based on an inadequate comparison of the two lifestyles (hunter-gatherer lifestyle and modern technological lifestyle). First of all, as Harari himself mentions in the succeeding pages, the above-mentioned "advances" that technological development has brought have only appeared during the last several decades. This only constitutes the tiniest bit of human history. Moreover, these "advancements" are only possible with the thorough destruction of the planet's ecosystems. These "advancements" are cutting

[34] "In order really to break the power of family and community, they needed the help of a fifth column." Ibid, page 402.

[35] See the diagram on page 405.

the very branch they sit on. They might be laying the foundations of unprecedented misery and insecurity.

More importantly, Harari devises this comparison as if it were possible to choose and get only the "good" parts of each lifestyle. As if we (the vast majority of people alive) had the chance to experience the positive aspects of the hunter-gatherer lifestyle today in the techno-industrial system. The lifestyles Harari compares are total packages with their "good" and "bad" parts inseparable from each other. Technological development, by thoroughly modifying every aspect of society, forces people to lead a certain kind of lifestyle and destroys other alternatives. The techno-industrial society, with each technological advancement, encroaches on us in our daily lives and shapes our lives according to its needs. Even the most stubborn among us can escape from these encroachments only to a certain extent. Since we have to bear the "good" and the "bad" parts of technological development altogether, what this "nuanced view" would amount to? At best, it would only amount to the passive acceptance of ever more technological encroachment.

On the other hand, Harari mixes up two things here: the facts and the value judgments regarding these facts. It is a fact that the development of technology decreased the infant mortality rate and the frequency of large-scale famines. But we cannot assume automatically that these are inherently good things. Most people, looking into the matter from a narrow perspective, assume these phenomena as good. But this doesn't make such value judgments an inherent part of the facts (i.e., the reduction of infant mortality and/or the frequency of large-scale famines), or facts in themselves. Harari, knowing that most people would see the reduced infant mortality rates or large-scale famines as something intrinsically good, artfully presents what is just a value judgment as if it was a fact in itself.

Harari discusses the results and implications of some recent studies on happiness. Psychologists ask people to rate their feelings about themselves, their lives, and their future. And they evaluate the results by linking the answers to the backgrounds (their family life, income, religious belief, health, etc.) of the participants. The results of these studies indicate that material factors (income, the physical things a person has, etc.) can only bring happiness to a certain extent. This means that after a point where the basic physical necessities are satisfied, the increase in material well-being has a decreasing marginal benefit in terms of happiness. Sickness brings unhappiness in the short term. But if it doesn't involve chronic pain, and the condition of the sick person doesn't deteriorate in time, people get used to their new condition. After this point, sickness stops being a factor in "happiness." Another discovery of these studies is that the sense of actively belonging to a group (family or a community) is more important than health, and money (material well-being). The most important finding of these studies is that "happiness" isn't dependent on the objective conditions of wealth, health, or belonging to a community, but on the correspondence between the objective conditions and the subjective expectations about these conditions.

Despite the fact that these findings support the "dogmatic" view that people become unhappy as we move away from our evolutionary adapted lifestyle, Harari doesn't want to reach that conclusion, or he doesn't want to explicitly state that. On page 428, he acknowledges that "the immense improvement in material conditions over the last two centuries was offset by the collapse of the family and the community." Moreover, happiness is mostly dependent on expectations. Past people didn't have the material conditions of today's people. They didn't expect to have air-conditioned apartment flats, automobiles, smartphones, subscriptions to streaming services, modern health-care facilities, etc. Therefore, it is absurd to put all these material "advancements" on one scale to compare the happiness of modern and pre-modern people in order to have our "nuanced" opinion.

But Harari omits to mention the most important thing in all this discussion of "happiness" and the meaning of life. This is the factor that bestows to an individual the feeling of satisfaction and purpose in his life: the power process. People usually "need to have goals whose attainment requires effort, and need to succeed in attaining at least some of these goals."[36] To satisfy this need in a proper manner, they usually need to go through the power process autonomously. This means they need to undertake the efforts necessary to reach their goals with their own physical and mental capabilities as individuals or as part of a small group. The psychological satisfaction people receive during the power process is proportional to the importance of the goals achieved. Therefore, if the goals pursued are related to the core physical necessities (food, shelter, physical safety, etc.), the satisfaction one will get from attaining these goals will be higher than from achieving more trivial goals. In a modern technological society, most people function as mere peons in giant organizations. Their day-to-day jobs aren't related to their immediate physical necessities. Moreover, the tasks they do usually are totally divorced from the end product since specialization is pretty advanced in modern society. Thus, they often procure their basic necessities with absurd and abstract tasks that don't stimulate them physically or psychologically. This condition robs the means and conditions of their lives from their own hands. Instead of their own mental and physical capabilities, they depend on large organizations to procure their most basic necessities. Since they habitually don't use their abilities in an active and purposeful manner, they tend to feel insecure and purposeless.

Perhaps in order to avoid to reach to the logical conclusions of his discussions and to refrain from discussing the most important aspect (the power process) in all of this, Harari starts to discuss brains, neurons, and hormones. According to biologists "our mental and emotional world is governed by biochemical mechanisms shaped by millions of years of evolution. Like all other mental states, our subjective well-being is not determined by external parameters such as salary, social relations, or political rights. Rather, it is determined by a complex system of nerves, neurons, synapses, and

[36] Theodore John Kaczynski, "Industrial Society and Its Future," ¶ 33, in *Technological Slavery Volume One*, Fitch & Madison Publishers, 2019, p. 31.

various biochemical substances such as serotonin, dopamine, and oxytocin."[37] Thus, we are not made "happy" by external circumstances or what we do and achieve in our lives; we are made "happy" by one thing only—pleasant sensations in our brains.

Pulling the discussion on happiness to a deeper level of complexity (brains, neurons, chemicals, hormones, etc.) doesn't exonerate us from acknowledging the effects of the external circumstances on our psychological well-being. Because hormones and electrical currents in our brains don't sway randomly. These are motivational mechanisms that have evolved in our evolutionary past to motivate and guide us to behaviors that would increase our chances of survival and reproduction. As we successfully and consistently do things that increase our chances of survival and reproduction, we feel happy and satisfied. Being physically and mentally active, and going through the power process adequately is one of the most important things that we need to be doing in order to feel satisfied and happy.

Moreover, what Harari says here amounts to denying external reality. He seems to think that the functioning of the brain, hormonal mechanisms, and the emotions they imply are independent of external stimuli. As if they were completely self-generating. If such were the case, we would be trapped in our skulls and wouldn't know if the external world existed or not.

Besides, equating "happiness" with the sensations that hormones and electrical currents create in our brains is to reduce it to pleasure. Real happiness is something broader than that. Harari admits that, "Happiness is not the surplus of pleasant over unpleasant moments. Rather, happiness consists in seeing one's life in its entirety meaningful and worthwhile."[38] But he doesn't apply this criterion to his comparison of hunter-gatherer and modern lifestyles. He can only cite the improvements in material conditions as the benefits of technological development. But the technological development changes our lives in such a fundamental way that it robs the meaning from them by eliminating the possibility of going through the power process. It turns us into atomized individuals by pulverizing the small-scale communities. It may be giving us a materially more comfortable life, but "a meaningful life can be extremely satisfying even in the midst of hardship, whereas a meaningless life is a terrible ordeal no matter how comfortable it is."[39]

Harari says that "from a purely scientific viewpoint, human life has absolutely no meaning."[40] From the examples that he gives on the same page, we see that he searches for this meaning in an ideological narrative (religious or secular). "*Any* meaning that people ascribe to their lives is just a delusion. The other-worldly meanings medieval people found in their lives were no more deluded than the humanist, nationalist and capitalist meanings modern people find."[41] But these ideological narratives (axial re-

[37] Harari, page 432.
[38] Ibid, page 437.
[39] Ibid.
[40] Ibid, page 438.
[41] Ibid.

ligions such as Christianity, Islam, or Buddhism; or their modern offshoots such as Liberalism, Socialism, or Anarchism and Communism) are misled reactions to the fact that we got separated from our natural habitats and lifestyle (nomadic hunter-gatherer life in wild Nature). They are trials for substituting the lost of meaning artificially (knowing thyself, reaching nirvana, realizing oneself, going to heaven, reaching Truth, trying to create the most perfect society on Earth, etc.) which –if they work at all– only work for a very small number of people.

Harari doesn't discuss the recent findings of anthropology and evolutionary biology/psychology in regard to all this. *Homo sapiens* evolved during a long nomadic hunter-gatherer existence. As living organisms that have been shaped by evolution, our purpose is to ensure the survival of our genes and we can do this by increasing our reproductive success. Of course, this in itself doesn't give meaning to our lives. Because nobody *consciously* takes the perpetuation of his genes as a purpose in his life. However, natural selection devises some proximate goals that would foster the survival of our genes in the end. In order to increase our reproductive success, we need to stay alive and appear attractive to the opposite sex. We need to satisfy our physical needs to stay alive. And the better we satisfy them, the healthier and more attractive we appear. Other qualities such as good social skills, talent in hunting and war-making, courage, self-confidence, etc. also improve our reproductive success. When we accomplish the tasks that increase our reproductive success by going adequately through the power process, we feel confident, satisfied, and happy. All these motivations and behavioral patterns were shaped during our long nomadic-hunter gatherer existence. People were doing the things that would increase their reproductive success autonomously, using their mental and physical abilities individually or as part of a small group. They controlled and governed the most important things in their lives using their own capacities. Since nomadic hunter-gatherer people were directly experiencing and feeling the meaning and purpose in their daily lives, it seems that they didn't have the need to search for this meaning in the lofty ideals of ideological narratives. It seems that they knew what was the meaning of their existence.

6. The End of *Sapiens*

Harari says that we might be living the last days of *Homo sapiens* as a species that is shaped by natural selection. Because humanity is fast devising techniques that are allowing it to design and create artificial biological organisms or purely artificial autonomous beings. Perhaps the scope of this change would be broader than the end of *Homo sapiens* because what is at stake is not only humans and encompasses many other living things.

Harari discusses three avenues that have the possibility to supersede natural life (life that has evolved in the context of natural selection) and replace it with artificially designed "life".

I. Biological engineering

This is the deliberate intervention to the building blocks of life: DNA. Scientists have now the ability to modify the DNA and create artificially designed organisms. However, creating artificial chimeras is still disconcerting for many people. That is why the enormous potential of genetic engineering[42] is being used now for some unspectacular economic concerns: making potatoes more frost resistant, making wheat ever more resistant to ever stronger herbicides, inducing pigs to produce omega-3 fat acids instead of omega-6 fat acids, etc.

Genetic engineering has the potential to transform human beings. Intervening in the DNA of humans is taboo right now. Apart from some religious, ethical, and political concerns, the uncertainty about whether genetic engineering would produce the desired results, and fears that its negative side effects might be greater than its benefits also restrict the application of these techniques to a limited area. However, some probable future improvements in the techniques of genetic engineering such as the effective treatment of currently incurable diseases would open a breach in this restriction and further encroachments would only follow. Moreover, further transformations in the structure of human societies and the deeper deterioration in the planet's ecosystems that will surely follow the new technological developments might create additional motivations for the application of genetic engineering: adjusting humans to the new social and technological developments, offsetting the effects of endocrine disruptors by directly intervening to the hormonal system, attempting to control the propagation of depression and anxiety by manipulating the nervous system, designing coral reefs that would be resistant to higher temperatures, recreating extinct species, fighting invasive species by genetic manipulation, etc.

II. Cyborg Engineering

Another area that is creating artificial life is cyborg engineering. It involves the merging of humans and also other animals with inorganic parts. There are currently implants that substitute or enhance sense organs or function as limbs. Apart from these mechanical interventions, there are projects that investigate the possibilities of fusing computer processors with the human brain. Armies are using insects to collect intelligence, and there are attempts to remotely control various animal species.

There are also other avenues that progressively merge humans with inorganic parts. People are spending increasingly more time glued to electronic stimuli: smartphones, laptops, PCs, gaming consoles, TVs, etc. We also shouldn't forget the wearable industry: smart watches, googles, rings, and straps that measure all sorts of data such as heart rate, sleeping patterns, blood chemistry, etc. Most people wouldn't consider

[42] It is needless to say that we regard this potential as abhorrent and a huge threat to wild Nature.

these as further merging with inorganic parts, but they nevertheless represent an incremental merging of humans with artificial objects and an insulation of humans from the natural world and their isolation in an artificial existence. With the proliferation of the wearable industry, more and more aspects of the human body are coming under the surveillance of technology, more data is gathered from humans, and this data is evaluated by machine learning algorithms to nudge humans to "healthier" lifestyles. The fact that all these electronic devices are becoming an essential part of modern daily life shows us how easily and quickly might go further cyborgization process: Humans are already getting accustomed to living with electronic appendages that shut them up in an artificial world.

Harari prefers to ignore this fact, but the most important force that is driving the cyborgization and the genetic reengineering of humans is the fact that humans are becoming obsolete as technological development transforms each passing day more deeply the society and the natural world. Natural selection hardly operates now on humans. As a result, their genetic makeup deteriorates with each passing generation. These defects have to be mitigated by all sorts of artificial implants and correction devices and procedures: glasses and contact lens, eye surgery, hearing aid, cochlear implants, cardiac surgery, pacemakers, Caesareans, organ transplants, insulin injections, etc. Societal transformations that have been brought by technological development are making human capabilities ever more out-of-date, and innate human behavioral inclinations are becoming ever more inadequate for our technologically advanced society. That is why we frequently hear today that humanity should enhance itself artificially if it doesn't want to be superseded, or people increasingly feel the need to nudge their behavior to "healthy" choices such as eating less, walking, or exercising, going to bed early, etc. through electronic devices ("smart" watches or bands, for example).

Therefore, modifying humans artificially through genetic engineering or merging them with inorganic parts is not a "cheerful" aspiration to reach the status of "*Homo deus*" as Harari wants to present it. But it is more of a desperate attempt to keep humans relevant in this rapidly changing world. It stems not from a standpoint of self-confidence, but from an uneasy premonition that our time is coming to an end. But it seems that Harari prefers to have a happy ending for his narrative, and presents this possible elimination of humanity as transcendence to *Homo deus*.

III. Artificial Intelligence

The third avenue to create artificial "life" is to engineer it from the scratch as total inorganic beings. This is the good old artificial intelligence. Harari enumerates recent advances in artificial intelligence technology. He especially emphasizes the machine learning algorithms, how these algorithms have the capacity of self-learning, and how they bestow on machines the capability of autonomy. Today, there are machines that

are able to play chess, drive cars, diagnose diseases, invest money in the stock market, etc.

As Harari also rightly points out, these three areas of technological development have the potential of rendering obsolete the age-old philosophical, religious, political, and ethical problems. Because these developments can bring in a near future where humans might be transformed into beings that would be totally different from as we know them, they could be supplanted outright by pure inorganic beings, or they could be reduced to a state of total servility and passivity as curious relics of an ancient time. These new beings would have conscious, emotional, and physical qualities that would be totally different from past or current humans. Harari rightly claims that this highly probable future should change all our current discussions. But these possibilities are hardly discussed in a serious fashion in the mainstream. The vast majority assume that, in an extremely advanced technological society, humans would remain as they are today, and the problems that would occupy the mainstream of such society would remain as they are now.

These observations of Harari are accurate, but the context he would like to base the discussion on these issues isn't. Harari says that, if our days are numbered, we should answer the following question: "What do we want to become?" But this question has no sense at all. He seems to think that public discussion can steer science to certain endeavors, and thus, technological development can be directed according to our wishes. We can become what we want to be. First of all, who is this "we?" How can there be a consensus about what "we" would like to transform "ourselves" into? What about the ones who would like to maintain their natural character? And the ones who would subject themselves to the insult of changing their natural character, how would "they" control their future transformation? How would "they" know when "they" reached their aim? And how would "they" maintain their new versions?

Future tinkering with biological organisms, including humans, won't be planned and implemented consciously according to a predetermined aim. "We" won't be able to ask questions about what "we" would like to be in the future, and come up with an answer to that question that would satisfy everybody. Even if "we" were to reach a consensus that would satisfy everybody, it wouldn't be possible to realize that, because we don't have the ability to control the development of technology and our societies. Tinkering with biological organisms and the creation of artificial "lives" will be realized in the context of the Darwinian competition between large organizations (states, corporations, etc.). Large organizations will develop these artificial organisms in the pursuit of their short-term interests. "We" won't be able to control these technological developments and usher desired consequences from them. Therefore, the real question that we have to ask ourselves boils down to this: Are we going to let technological development supersede humanity? Are we going to let it replace us with genetically engineered monstrosities, cyborg chimeras, autonomous machines, or some combination of these? Are we going to let it to substitute human beings and the remaining wild Nature with a completely artificial system; or, more plausibly, a near-death planet due to thorough

destruction of the planet's biospheric functions? *Or* are we going to put a stop to all these and save our human nature with the rest of wild Nature? That is the only practical choice we have now.

Book Summary and Review II: Civilized Man's Eight Deadly Sins — Konrad Lorenz

Saturday, October 29, 2022

This review was updated on the 19th of February, 2023. I would like to thank Ultimo Reducto and his partner in Naturaleza Indomita, A.Q., for their suggestions and corrections.

The book[1] by Konrad Lorenz that I review in this paper was published originally in Germany nearly fifty years ago, in 1973. In it, Lorenz investigates eight problems that have been created by the human civilization and threaten its existence. As we will see during our investigation, modern technology is the common thread that links all of these problems together. We can see that these problems have become more widespread and intense as modern technology has continued to develop since 1973.

1. Overpopulation

Organic life, like a dam, is situated in the middle of the universal energy flux. Living things absorb energy to their metabolisms by taking advantage of the negative entropy, and this energy increases their mass. As their mass increases, their capacity for energy absorption also increases. That, in turn, accelerates their rate of enlargement. This process is an example of a positive feedback loop, and if positive feedback loops don't end up in a catastrophe, it is thanks to negative feedback loops that balance them. Some relentless physics and probability laws counter this energy absorption and enlargement tendency inherent in organic beings. Thanks to these laws, living things and ecosystems reach homeostasis. But according to Lorenz, men, due to their technology, surpass the boundaries these laws set, and increase their mass with a positive feedback loop unchecked by a balancing negative feedback loop.

[1] Konrad Lorenz, *Civilized Man's Eight Deadly Sins*, Harcourt Brace, 1974.

Overpopulation forces people to live as big masses in enormous cities. Men aren't adapted to live in close physical proximity with hundreds and thousands of people. For this reason, modern man is inclined to ignore people whom he doesn't know personally. Moreover, being in perpetual and close proximity to many people diminishes his capacity to care even for his close ones. According to Lorenz, some of the pathological behaviors modern city dweller exhibits are due to this crowded and unnatural environment. Lorenz refers here, especially, to some pathological violent acts we see in metropolises. Experiments on animals and observations on people have demonstrated that crowded environments increase aggression.

However, Lorenz doesn't mention that overpopulation is one of the most influential factors in the destruction of wild Nature. The construction of the buildings that are necessary to accommodate milliards of people, the clearance of wild lands for agriculture, the extraction of the resources that those humans need, etc. result inevitably in the destruction or subjugation of wild Nature.

Today, many people think that anxieties about overpopulation that were much more common during the 60s and 70s turned out false, and overpopulation isn't a problem anymore. During the 70s, when Paul Ehrlich's *The Population Bomb* came out, the main concern was that the expected population increase would render food sources insufficient, cause global famines, and social upheavals or wars would follow. As it is well known, the world population of 3,5 milliards in the 1970s is approaching today to 8 milliards. But this doesn't mean that there is no overpopulation problem today. As Lorenz indicates, humanity has continued to increase its population by suspending the negative feedback loops that would normally act on this population. This has been achieved thanks to new technological developments in agriculture: the widespread adoption of more efficient crop types, artificial fertilizers, and chemical pesticides. Therefore, the overpopulation problem as Lorenz defines it in this book has continued unabated: a positive feedback loop unchecked by natural limits that have been suspended by technological means. But this can be done only so long, and as Lorenz also indicates in his book, unchecked positive feedback loops in Nature generally end in a catastrophe. Besides, the toll exacted on wild things to sustain this population boom has been enormous and is getting bigger as the population continues to grow.

2. Devastation of the Environment

The species that constitute an ecosystem have very complex relations of interdependency among each other. Predators and preys are dependent on each other. Ecosystems have reached their current equilibria by passing through long evolutionary processes. Though some relatively rare natural events might destroy or radically alter some ecosystems quickly, the evolution of ecosystems, like the evolution of species, happens very slowly.

But humans, due to their technology, have an ecosystem that changes very rapidly.[2] The exponential growth of technology causes rapid and deep transformations in natural ecosystems that humanity depends on for survival. Here Lorenz is speaking about both the rapid and deep transformations humanity causes in Nature and the rapid and fundamental changes that occur in the artificial environments (cities, countryside, etc.) which are created by the human civilization. These transformations, according to Lorenz, are detrimental to the health of the ecosystems: to "humanity's ecosystem" and also to wild ecosystems. Exponential growth in technology changes cities physically and demographically in a rapid fashion. This rapid change also affects the routines of everyday life (from the forms of work to free time activities), and the relations among people (the structure of the family, the relations between men and women, etc.)

Lorenz focuses specifically on the aesthetics of the cities. According to him, the rapid geographical spread of the cities devastates the aesthetic quality of the living environment of humans. He compares the cities that were built during the Middle Ages with the recent development of the suburbs, and remarks that the latter have no aesthetic quality. The lack of aesthetics in these recent developments stems from the fact that they are mass-produced. They spread rapidly like cancerous cells. The living environment of humans changes so rapidly that the equilibrium that takes for Nature a long time to be reached is no longer present in human ecosystems. Lorenz attributes the beauty of Nature to this equilibrium which is created only through a long evolutionary process. Modern cities have lost their aesthetic quality because only a similar evolutionary process can create a functional and healthy whole.

Humanity, which destroys Nature's spontaneous aesthetics, is forced to live in an awful and ugly artificial environment. Lorenz states that this situation destroys man's moral and aesthetic sense. Modern living environments, with their mass-produced sameness, ignore people's individuality and stifle it in the end. Modern cities are comprised of millions of people who are stuffed in identical cages that are stockpiled on top of each other. Lorenz remarks that a person who endures this misery is inclined to isolate himself from his neighbor who suffers from the same conditions. According to Lorenz, this inclination is caused by the desire to run away from one's own misery that is reflected from a neighbor. But I think there is a more fundamental desire in this inclination. Modern man is inclined to avoid his neighbors who happen to live just above, below, or next to him because, essentially, his neighbors are strangers to him. These people are generally neither his relatives nor they are part of a small group through which they engage together in a practical and meaningful activity. Even being relatives or close friends is losing gradually its practical meaning nowadays. The modern individual can only function as a replaceable component of a giant social organization which makes him disappear in a giant crowd of millions of people. Friends

[2] By "humanity's ecosystem," Lorenz means the integration of two things: natural ecosystems that humanity depends on and the artificial environment that is built on these natural ecosystems by humans.

and relatives are mostly for passing away their "free time." That is why an average modern individual is becoming lonely and isolated in practical terms.

Lorenz's position is environmentalism. Environmentalism concerns itself with the devastation of wild Nature only to the extent that it affects "humanity's ecosystem." It is concerned that Nature wouldn't be able to sustain the services it gives to human societies such as supplying clean air and water, absorbing their waste, and providing various resources. Environmentalism's attitude towards wild Nature is instrumental. It doesn't see wild Nature as valuable in itself. Even though Lorenz mentions the devastation that the rapid advance of technology brings to wild Nature, he is more concerned about the effects of this on the "humans' ecosystem." He focuses on the aesthetic misery of modern cities. His attitude on this issue is reminiscent of the humanist anti-industrialists (Jacques Ellul, Lewis Mumford, etc.) who lament the old cities, old monuments, and old cultural achievements that, according to them, were so magnificent before technological development passed some optimum threshold. According to them, technology, up to a certain level of development, was conducive to the process of humanization. It was helping humanity to elaborate and refine its sense of aesthetics, and sense of morality. It was making *Homo sapiens* more human by refining those qualities which distinguished him from other animal species. Once this optimum threshold has been passed by technological development, it began to have the opposite effect. It started to dull humanity's sense of morality and aesthetics. Cities started to lose their old beauty, people started to be more concerned with the practical aspects of things rather than with their beauty, they became the victims of a banal and vulgar popular culture, the residents of the metropolitan areas became less concerned with one another, they became more prone to senseless violence or other unnatural bizarre acts.

Humanist anti-industrialism's lamentations about the old cultural achievements of humanity are no more than romantic nostalgia. And its main concern (the process of "humanization:" making humans more human, refining their aesthetics and sense of morality, etc.) reflects its progressivist stance. What this concern about "humanization" amounts to is to try to "improve" humans through cultural conditioning, to stifle or subjugate their wild nature. How can we differentiate this aim from the technophiles' dreams about trans-humanity, integrating humans with machines, modifying their genes, or some other disgusting projects that purportedly aim to improve humanity too? These aims are, qualitatively speaking, the same. Technophiles and anti-industrialist humanists see humans in their natural condition as something unachieved, unfinished, and something that needs to be "improved" through cultural means. So, they both try to "improve" humans by artificial means. We can only avoid falling into this trap by making the wild human nature as our reference point. No "improvements" can be made artificially on what Nature (the evolutionary process) has made us during our long existence as nomadic hunter-gatherers.

Lorenz focuses on the developments since the Industrial Revolution. However, when it comes to the devastation that has been brought on the "humans' ecosystem" (the

artificial environment humans live in), at least since the advent of sedentary life and the Agricultural Revolution, there hasn't been a qualitative shift in this domain. Humans have been living in unnatural environments that they are not evolutionarily adapted to since they moved to a sedentary lifestyle. These sedentary living environments, since their beginning, have been much more crowded than small natural human groups, destroyed the beauty of Nature, subjected humans to unhygienic conditions and infectious diseases, stratified people to strict social hierarchies, and tried to restrict the spontaneous expression of human nature through various mechanisms. Of course, they have become worse in nearly all of these aspects as technology has advanced. As Lorenz also remarks, since the Industrial Revolution, the spread of these artificial environments has become cancerous. But this is not due to some change of mentality in humans because they've lost their sense of aesthetics or morals. This is simply because human societies have at their disposal much larger amounts of energy and material resources since the Industrial Revolution. That is why they are getting bigger and transforming larger areas of wilderness into artificial environments more rapidly, trapping more and more people in close proximity to each other and isolating them more firmly from wild Nature. Because of this, people are living in conditions that are becoming remoter each day from the conditions that they evolved in. Though it may be to some extent a subjective assessment, this stricter isolation from wild Nature might be the reason why the artificial environments have lost their aesthetic qualities compared to their historic precedents. Our aesthetic sense evolved as well during our long nomadic hunter-gatherer existence, and it must have been attuned to the sounds, smells, and views of Nature. In most of the cities or towns of the past, the existence of wild Nature was palpable. They were surrounded by wild Nature, and their residents could feel and even experience wild Nature to a certain degree. They could see it around human settlements and reach it by walking, and they weren't as isolated from it as the inhabitants of modern metropolises.

3. Man's Race against Himself

The competition among the members of a species might reach a point that could damage the survival capabilities of that species. Lorenz gives *Argusianus* bird as an example to explain this phenomenon. The females of *Argusianus* choose their mating partners according to the attractiveness of their tails. This sexual selection pressure causes male *Argusianus* birds to develop enormous tails. If this sexual selection pressure which makes males to develop big tails hadn't been balanced by an opposite selective pressure from the predators dwelling on the ground, males of *Argusianus* might have lost their ability to fly. The existence of ground-dwelling predators creates a negative feedback pressure that balances the sexual selection pressure.

Lorenz says that in humans as well there are intra-species selection pressures. But with some important distinctions: In humans, intra-species pressures foster cultural

development (the total production of human civilization which is not transferred by genetic inheritance), and there isn't a counter-balancing selection pressure that would balance intra-species selection pressures. For this reason, humanity's cultural development, in the absence of a counter-balancing force (a negative feedback loop) is marching towards a catastrophic point.

What Lorenz means by human intra-species selection pressure is the economic competition among humans: Producing more and newer materials and selling them to outmaneuver competitors. This indicates that Lorenz sees human intra-species competition as something unique to a specific economic model: an ideology or system that regards producing and consuming more as something divine, an ideology or system that values material welfare as something supreme. But, human intra-species competition is something much broader and deeper than what Lorenz seems to think. Because Darwinian selection, which is the main mechanism of biological evolution, also operates at the level of human groups (states, corporations, criminal gangs, political parties, etc.) There is an unconscious, automatic, and spontaneous competition between these groups. Darwinian selection picks from these human groups which have qualities that make them better at surviving and propagating themselves than their rivals. And these qualities are, fundamentally, the ones that make some human groups better at reaching and efficiently absorbing energy and material resources. Lorenz's economic competition is only a special occasion of this broader Darwinian competition. This competition's speed and ferocity, and its impact on wild Nature, increase with the development of technology. Because technology enables human groups to draw ever more resources from their environment in ever shorter time frames. Thus, they become able to transform their environment and wild Nature much more rapidly and intensely. The results of this are the ever more rapid and intense subjugation and destruction of wild Nature, as well as the rapid transformation of the artificial environment that humanity lives in. The changes that technological development brings to society have become so rapid and intense that, in 15–20 years, our living environment is altered beyond recognition in many aspects (physical, demographical, cultural, etc.) This abnormal transformation creates in people the sensation that time passes rapidly and space shrinks enormously. According to Lorenz, this creates in humans a generalized feeling of stress and dissatisfaction.

Lorenz remarks that modern individuals are in perpetual fear of lagging behind, fear of being unable to adjust to changes, and being unsuccessful. Of course, the result of this is a generalized feeling of stress and constant agitation. Lorenz sees in this constant state of agitation the reason for modern man's inability to remain calm with himself and with his thoughts. Modern man, since he dreads to face himself and his thoughts, tries to drown them in a perpetual image and sound bombardment.

4. Entropy of Feeling

There are some mechanisms that motivate animals to undertake actions that would keep them alive. These mechanisms, in simplistic terms, motivate animals to flee from pain and chase pleasure. Pain constitutes punishment, and pleasure constitutes a reward. Punishment and reward condition animals to avoid pain and reach for the things that give them pleasure. Evolution created this mechanism of award and punishment in order to motivate animals to perform the behaviors that would keep them alive. This mechanism also motivates animals to carry out behaviors that involve hardships which, in the end, will bring them greater rewards than the hardships they endure. For example, a wolf-pack may cover great distances, cross a cold river by swimming, and put themselves in lethal danger in order to hunt a bison. The reward of the meat is big enough to motivate them to endure those hardships. Animals, in accordance with the relative weights of the rewards and punishments, risk some dangers and endure some hardships, or avoid them altogether. In environments where rewards are plenty and easily accessible, the attractiveness of the rewards and their potential to motivate animals decreases. Because constant repetition of stimuli causes desensitization.

With the subjugation of wild Nature, humanity has stepped out of the natural pain-pleasure balance. Humans, in their recently created artificial environment, have decreased to a great extent the frequency of the occasions that they need to exert effort or endure physical hardships in order to reach some rewards. In today's modern world, people can reach comfort and pleasure or they can satisfy their basic physical necessities without having to toil under hardships. Modern men develop desensitization against rewarding stimuli, because easily reachable and constantly repeating stimuli lose their satisfactory power. Besides, the possibility to reach rewards without enduring hardships erodes the modern individual's capacity for delayed gratification. This means that a great number of people have lost their capacity to endure hardships here and now in order to reach a reward that would await them at the end of a demanding process. People have been losing their ability to undertake projects that would require enduring labor, concentration, or attention. As a result, they can't experience the satisfaction that finishing successfully a demanding job used to give people.

The evolutionarily adapted reward-punishment mechanism goes haywire in modern life because the conditions this mechanism evolved in are quite different from the conditions modern people find themselves in today. Because people lived a physically demanding life during their long nomadic hunter-gatherer existence when *Homo sapiens* as we know it today took shape. They were living in wild Nature, and they had to exert their physical and intellectual capabilities in a demanding fashion in order to satisfy their most important physical necessities. They could face such dangers as hunger, being attacked by wild animals or other human groups, etc. For this reason, avoiding expending energy as much as conditions allowed it (laziness), gorging with food when it was available (gluttony), and avoiding dangers as much as possible (cowardice) were, considering the circumstances of the time, logical strategies that evolution bestowed

on humans as default inclinations. Most humans need the enforcement of the circumstances in order to override these inclinations and behave industriously, frugally, and bravely. And circumstances in paleolithic times forced them frequently to behave industriously, frugally, and bravely. So, it is easy to imagine the problems that would ensue in modern comfortable conditions because of a behavioral repertoire that evolved under the circumstances of paleolithic times.

Lorenz says that we can see the consequences of the disruption of the reward-punishment mechanism in such diverse manifestations as the consumption craze to the shallowness of human relations. Since there is no need to undertake a task that would require hard work, people immerse themselves in consumption which would satisfy their desires immediately. But as the dimensions of this consumption increase, the amount of satisfaction it gives decreases, and this is tried to be remedied by ever more consumption. This problem also affects the relations between humans. What makes human relations (familial and conjugal relations, friendships, etc.) intense and meaningful are not only the positive or happy feelings that we get from these relations but also the responsibilities and conflicts that these relations bring. But humans are losing their power to carry these responsibilities and endure these conflicts. Lorenz remarks that relations with the opposite sex are turning into mere sexual pleasure without the responsibilities that Nature and tradition bestow on them: sexuality is being stripped from the familial roles and the responsibilities of child-rearing and is being turned into mere pleasure.

Remember that Lorenz was making these observations at the beginning of the 70s. The conditions that disrupt the award-punishment mechanism in humans have intensified significantly since then. Human relations, which according to Lorenz have lost their intensity, have greatly moved to the digital realm (social media) after the total destruction of small-scale communities and isolation of individuals in amorphous masses. Due to online pornography, more and more people experience sexuality with pixels on a screen instead of real humans. Because it is much easier to send a digital message or play a video by pressing a button than directly deal with real physical people. Lorenz was seeing consumption as an effortless way to reach pleasure. Today, with the advent of online shopping, it is possible to consume without even moving one step physically and without interacting with anybody. Digital communication technologies which purportedly connect people are in fact the means to prevent real physical face-to-face contact. They isolate people from each other and the outside world. Modern individuals' need to escape from effort has reached such proportions that, sometimes, they can't even tolerate the most minuscule residues of physical contact. That is the reason why, even if they're not forced to do so by their circumstances, they sometimes choose to communicate via digital text messages and try to reflect their emotions with "emojis."

It is clear that Lorenz's observations regarding the reward-punishment mechanism and its disruption in modern conditions are quite similar to Ted Kaczynski's concept

of the "power process."[3] But unlike Kaczynski, Lorenz misses the fundamental reason for this problem. The technological system, forcing humans to live in circumstances that are radically different from the ones in which they evolved in, deprives them of the possibility of undertaking a concrete and purposeful task that is directly related to their physical existence. Therefore, modern man finds himself in a huge void of meaninglessness, and this void is tried to be filled with consumption, entertainment industry and hedonist pleasures.

5. Genetic Decay

Lorenz starts this chapter by discussing the altruism or cooperation problem. Some social behavior patterns are advantageous for the community but against the interests of the individual. So, how could mutation and selection explain the origin and retention of these altruistic behavior patterns? Because "anti-social elements" who were parasitic on the altruistic behaviors of other members of the community would reap the benefits of altruistic behaviors without themselves giving anything back. They would be at an advantage and outproduce altruistic individuals. "Anti-social" members would prevail in the end, and altruistic behaviors and cooperation would cease. Lorenz says that "we do not know what has prevented the pervasion of the society by social parasites."[4]

It seems that Lorenz was not aware at the time he wrote this book of the theories that explain the evolution of altruistic and cooperative behavior: inclusive fitness, kin selection, reciprocal altruism, and multilevel selection. According to the inclusive fitness theory, the reproductive success of an organism not only depends on its own survival and reproduction, but also on the survival and reproduction of its kin. Since an organism shares a certain amount of genes with its genetic relatives, the reproductive success (survival and reproduction) of its kin also contributes to the success of this organism's genes. Genes of an organism might propagate themselves through its genetic relatives. Therefore, mutation and selection could create altruistic behaviors in organisms that would make them help genetic relatives to survive and reproduce. Reciprocal altruism, on the other hand, explains how cooperation can evolve among the members of a community who are not genetic relatives. Mutually altruistic acts might increase the reproductive success of the participators. This was proven through the "tit for tat" strategy in game theory. In stable and long-term relations, it is better to act in kind. If your partner is cooperative, it is better to act cooperatively, because, in the long run, this increases the benefits for both parties. According to multilevel selection theory, Darwinian selection can also act on the group level in certain conditions. When the social group acts as a higher-level organism, between-group selection can dominate

[3] For the concept of the power process, see: Theodore John Kaczynski, "Industrial Society and Its Future", ¶¶ 33 – 37, in *Technological Slavery: Volume One*, Fitch & Madison Publishers, 2019, pp. 31–32.

[4] Lorenz, *ibid.,* p. 44.

the within-group selection. In such a case, selection favors altruism because groups with members who behave altruistically for the benefit of the group can outproduce other groups that don't have altruistic members.

According to Lorenz, humans have an innate sense of justice. Nearly all humans share fundamental intuitions about justice, and about what is right and wrong. The source of this intuition is innate. Lorenz acknowledges that these are speculations, and he cannot prove them. However, some experiments on babies would later show that humans really have innate notions of justice. These experiments showed that babies know that people have goals, they ascribe beliefs to people and can anticipate a person's behavior based on his belief, they view the helping acts as positive and the hindering acts as negative, and they prefer helpful individuals to the hindering individuals.[5]

Lorenz claims that, throughout history, human societies prevented "anti-social" individuals from reproducing themselves using this universal intuition. He says that "normal" members of society have specific reaction patterns that make them respond negatively to "anti-social" behaviors. These reaction patterns, utilized by human societies, prevented the "anti-social genes" from spreading. According to Lorenz, modern society renounces the mechanisms that allow it selectively (genetic selection) to eliminate people who are genetically predisposed to "anti-social" inclinations and unable to accept the responsibilities society bestows upon them. Lorenz says that two characteristics of modern society are sabotaging this selection process. First is the belief that humans are "blank slates." According to this wrong but quite common belief, an individual's character and his behaviors are shaped, almost completely, by the circumstances of his environment. There aren't any innate genetic determinants that shape an individual's character, psychological inclinations, etc. Therefore, the behaviors of humans could be shaped from scratch by environmental cues such as education or any other indoctrination method. If an individual is acting "anti-socially," the blame should be on his environment or on the society he lives in, never on him. This person can be educated and rehabilitated to society. According to Lorenz, this wrong belief is preventing society eliminating genetically anti-social people and thus, these genetic tendencies are becoming more common in society. The second feature is the fact that, as Lorenz also mentions in the previous problem, living conditions that are prevalent in modern society are fostering infantile inclinations and suppressing adult behavior patterns. According to Lorenz, "the impatient demand for instant gratification, the lack of any sense of responsibility and consideration for the feelings of others, are typical of little children..." And "the ability to work for a distant goal, a sense of responsibility for one's own behavior, and consideration for the feelings of others are behavior norms characteristic of a mature person."[6] Lorenz observes that people who don't have the

[5] For a detailed discussion of this subject see, Paul Bloom, *Just Babies: The Origins of Good and Evil*, Crown, 2013.

[6] Lorenz, *ibid,* p. 56. Lorenz enumerates here, without any qualification, the "consideration for the feelings of others" as a characteristic of a mature person. However, humans are naturally concerned mainly about the close circle of kin and friends. Human societies, as they get bigger and more crowded,

characteristics that make an individual an adult aren't ready for the roles that they should assume in society.

Lorenz's attitude on this subject is quite simplistic. He doesn't specify what he means by "anti-social" acts. Apart from some obvious pathological behaviors, not every behavior unapproved by a society is morally bad. Sometimes it is the society that is wrong, and a minority people who have some attitudes, behaviors, and ideas against the mainstream of the society who are right. Lorenz talks here as if the society is always right. Besides, he doesn't specify which society he is talking about. He equates all types of societies from small-scale natural human groups to developed techno-industrial societies. Different societies have different rules and obligations, and their living conditions are not the same. Some of them (such as our modern society) force humans to live in conditions that they are not evolutionarily adapted to, because those behaviors generated by the adaptations to an ancient way of life may not necessarily be adaptive in the modern world.

On the other hand, Lorenz's concerns about the spread of "anti-social" behaviors in modern conditions didn't turn out to be true. On the contrary, behavior patterns have become more pro-social and collectivistic, and they have become more widespread during the interval. I think that Lorenz's concerns should be seen in the context of the period he was writing this book. This book was written right after the student and youth revolts of 68. The ideology and values of this movement were quite popular at that time. The end of the 60s and the beginning of the 70s were the times when the third-wave left[7] was assuming the dominant position among modern ideologies. During this period, the following theories became quite popular: the rejection of traditional values (family roles; norms that were regulating manners, clothes, speech, etc.); theories that purported that criminals are the victims of the social system,[8] that they are rebels who are revolting against a crooked society; etc. The popularity of these theories reflected itself in police and judiciary as a more lenient approach towards criminals. For this reason, the 60s and 70s were a period when violence and criminality increased in Western societies.[9]

Of course, the increase in violence was affecting the social machine in a negative manner. This caused a counter-reaction beginning in the 80s. States became more harsh and effective against criminals, police organizations got bigger, and from the 80s on,

---

try to instill in individuals concern for a much larger circle of people (nation, humanity, etc.) in order to foster social cohesion. So, "consideration for the feelings of others" regardless of who they are, even if it could be achieved, would be greatly the result of a collectivistic indoctrination.

[7] For the historical development of leftism and the definitions of first, second, and third-wave leftism see: *https://vahsikaracam.blogspot.com/2020/12/solculuk-tekno-endustriyel-sistem-ve.html*

[8] Modern living conditions might be causing some pathological behaviors in people. But we can't attribute every criminal, self-sabotaging, pathological, or anti-social act to the circumstances prevalent in modern society. As Lorenz mentions, some people are genetically inclined to these behaviors, and their inclinations can't be attributed to any circumstance of modern society.

[9] Steven Pinker makes this case in *The Better Angels of Our Nature*, Penguin Books, 2012.

there was an important increase in the numbers of incarcerated people.[10] Those values and theories that fostered anti-social behaviors were mostly eliminated from the third-wave leftism. Violence, in all its forms, is regarded now as the most despicable thing. Third-wave leftism, by setting aside most of the economic goals of the second-wave leftism, focused aggressively on the issues of the "oppressed" (homosexuals, women, animals, minority ethnic or religious groups, etc.) Third-wave leftism has become the dominant ideology of modern society and thus, the concern about the issues of the "oppressed" has become mainstream. This ideology demonizes all forms of violence, and encourages empathy, social responsibility, and pity towards the "weak" and "oppressed." It can be said that the social reaction against the rising violence and criminality of the 60s and 70s turned out to be successful. Contrary to Lorenz's concerns, beginning in the 90s, the general population has internalized collective social norms more and more deeply, and a society that is more passive has been created. Those parts of the ideology of the 60s that embraced violence and rejected social norms on speech or clothing have become commodities for popular culture: in movies and music there is an exaggerated display of violence and sexuality, pornography is extremely widespread, and manners in clothing and speech aren't subjected to the strict norms of the 50s anymore. This superficial relaxation in movies, television programs, music, video-games, etc. (i.e., the so-called "popular culture") and everyday manners is actually a symptom of a much more internalized and deeper compliance. The social machine knows that the mere display of violence and extreme sexuality in popular culture will be limited to those virtual/fictional domains. It won't lead astray its members to violent and anti-social dangerous real behaviors, on the contrary, this explicit content of the popular culture is relaxing its members who in fact are strictly surrounded by other and more important restrictions.[11]

However, the second characteristic Lorenz mentions is still relevant today: Modern conditions are fostering infantilization in individuals. In fact, this situation has been exacerbated since this book was written. The Internet, especially, has played a decisive role in this exacerbation. It has greatly intensified modern technological society's tendency to eliminate effort from the daily lives of its members. Nowadays, the modern individual can reach consumption with one "click." He can immerse himself, whenever and wherever he likes, in a bubble of sound and images in order to forget his miserable and meaningless existence. All these are decreasing the attention, concentration, and delayed gratification capacities of the modern individual. Consequently, his ability to perform in a useful and efficient manner is also decreasing. This might have, in the near future, negative consequences for the efficient functioning of the social machine. And remember that, these tendencies are occurring in parallel to the advancements in

[10] See the chart at the following link for the United States: *[[https://www.vox.com/2015/10/11/9497161/incarceration-history][https://www.vox.com/2015/10/11/9497161/incarceration-history]* .

[11] For example, any display of aggressive behavior or violence is banned by law or by the new third-wave leftist social norms, and the set of behaviors, words, or styles of speech that is considered offensive and inappropriate is getting larger day by day.

robotic and artificial intelligence. The quality of the functions people are performing in the social system is in constant decline due to ever more specialization, and machines are assuming ever more portions of the economic roles. These two tendencies that develop in tandem with each other might finally end up leading the technological system to substitute humans with machines.

Lorenz omits mentioning a more obvious source of genetic decay in modern societies. Modern conditions –modern medicinal techniques specifically– are putting humans out of natural selection's reach. For example, a person with myopia would have fewer chances to reproduce in ancestral environments. His chances of falling from a precipice or becoming prey to a predator would be higher than someone with no visual impairment. Therefore, genes that contribute to this eye disorder tended to be eliminated by natural selection in ancestral environments. But today, even people with severe visual impairments don't have any survival problems due to their visual disorders. They can remedy these defects using spectacles or going through surgery. And their genes contributing to this defect will continue to spread if they have progeny. Many other medical techniques like insulin treatment, Cesarean section, heart implants, vaccines, antibiotics, etc. produce similar consequences.

6. The Break with Tradition

Lorenz says that cultural phenomena evolve, in the Darwinian sense. Since cultural phenomena evolve through a long and complex process, and since they are part of a complex system (human society), it isn't possible to understand completely the role cultural phenomena assume in the functioning of a society. Therefore, rapid and radical changes in cultural phenomena might create unforeseen consequences.

Human groups who belong to different cultures develop different languages, attitudes, clothes, etc. These differences turn into symbols that distinguish people who belong to such cultural groups. Every ethnicity is inclined to see themselves as the real humans and regards other ethnic/cultural groups as lesser than real humans. Therefore, they don't include the members of other ethnic/cultural groups in the norms that regulate their intra-group relations.

Lorenz, based on the observations he made on the youth movement of 68, says that in Western societies different human groups have appeared who regard each other as belonging to different cultural/ethnic groups. According to Lorenz, what motivated the youth of 68 was the ethnic hatred that one ethnic group harbors against the other. Younger generations began to see themselves as members of a completely different human group than their seniors. For this reason, the seeming political protests of the 68's youth, in fact, were against the older generations whom they saw as belonging to a different ethnic/cultural group.

Lorenz says that what transforms subsequent generations into different ethnic/cultural groups is the rapid advancement of technology. As the advancement of technol-

ogy transforms society rapidly, the lifestyles, values, and world views of subsequent generations quickly diverge from each other. This rapid change breaks the tradition's continuity. The existence of these different ethnic/cultural groups in one society creates enormous tensions.

Lorenz specifically underlines the erosion of familial ties in modern conditions. There is a widening gap between parents on the one side and parents and children on the other side. Lorenz talks about the problems the lack of a father figure creates in children, especially in boys. According to Lorenz, the structure of the family should be hierarchical. Children should feel respect and fear towards their parents in their formative years. Because a child who cannot take care of himself needs somebody who would lead him, whom he would take as an example of how to be an adult. Lorenz claims that pseudo-democratic[12] ideas attack and damage the hierarchical structure of the family. They erode parents' authority and relegate them to a position that makes it impossible for children to respect them. For this reason, these pseudo-democratic ideas have greatly contributed to the neurotic character of the young generations. According to Lorenz, as the technological development changes society, the family structure undergoes many alterations and one consequence of this is the loosening of the bonds between parents and children. This starts from the infant age. "The modern mother can hardly ever give her full time to her baby."[13] Lorenz remarks that "except among farmers and craftsmen, a boy almost never sees his father at work, nor does he have the opportunity of assisting him and coming to appreciate the father's superiority."[14] If he were to write this book today, he would say that, especially in Western societies, many children cannot even see their father physically.[15]

7. Indoctrinability

Today, it has become possible to indoctrinate people on a mass scale due to the advancements in bureaucratic structures and communication technologies. Therefore, it is possible to keep a large number of people in a bubble of false ideas isolated from the realities. Moreover, attachment to false ideas becomes stronger as the number

[12] Pseudo-democratic ideas, according to Lorenz, are ideas that regard natural rank order (based on age and experience, talent, strength, intelligence, etc.) between two people as something always bad. These ideas also manifest themselves in the belief that the differences among people are, for the most part, the products of the external environment, so people would be equal if they could develop under the same external conditions.

[13] Lorenz, *ibid.,* p. 71.

[14] *Ibid.,* p. 71.

[15] In the US, 25 percent of the children are being raised in fatherless households. "Even for children with a father present in the home, the average school-age boy only spends about 30 minutes per week in one-on-one conversations with his father." *[[https://americafirstpolicy.com/latest/20220215-fatherlessness-and-its-effects-on-american-society][https://americafirstpolicy.com/latest/20220215-fatherlessness-and-its-effects-on-american-society#]*

of people who believe in them increases. Lorenz gives an example: Behaviourism[16], which had greater prestige when the book was written. Behaviorism played a big role in the spread of the false idea that human behavior can be shaped almost wholly by external conditioning. Lorenz sees Behaviourism as a pseudo-democratic ideology. Behaviourism is a totalitarian ideology that legitimizes and promotes the conditioning of human behavior by external intervention.

The belief that humans are blank slates and their behavior can be shaped from scratch through external intervention (education or any other indoctrination techniques) is still quite widespread. This belief is more common in leftist milieus, but it is shared by all the other humanistic ideologies. The main motivation behind the ideology of the blank slate –even if the promoters or passive accepters of this ideology don't pursue this consciously– is the need to adjust humans to the complex societies that were born with the Agricultural Revolution. Humans' behavioral repertoire evolved during our long nomadic hunter-gatherer existence when we lived in small bands. Complex sedentary societies that were born with the Agricultural Revolution forced on humans behaviors and lifestyles that don't correspond to their evolutionarily adapted inclinations. A substantial part of human history since the Agricultural Revolution has also been the history of the problems that were created by this discrepancy. The belief that humans are blank slates that can be shaped by external conditioning keeps alive the hope that these age-old problems will be solved permanently someday: We will create a perfect society in which enlightened and educated people will fit perfectly. Humans will have the correct values and they will show no symptoms of disharmony such as depression, anxiety, drug addiction, etc. In this perfect society there won't be aggression, violence, delinquency, etc. either. It is clear that the belief in the blank slate theory is one of the core tenets of the progressivist ideology.

Although it would be easier to shape thoughts than behavior, it is possible to shape human behavior as well up to a certain extent. Every society throughout history has tried to shape the thoughts and behaviors of its members with various degrees of success. But shaping human behavior and thought, without direct biological intervention, can only go so far. Precisely this human characteristic is what makes real freedom possible. Because how could one deem himself to be a free individual if the totality of his ideas, values, inclinations, and behaviors could be shaped by indoctrination, education, or coercion by large organizations? Real freedom in humans, just like in other wild animals, consists in freely expressing evolutionarily adapted inclinations.

The Internet has exacerbated in recent decades the phenomenon of isolation in a bubble of false ideas. While the vast majority of the Internet users are drowning in meaningless sounds and images which are getting shorter by the day (they have reduced to durations measured by seconds) to accommodate their diminishing attention

[16] Behaviourism is a psychological theory which claims that human behavior is determined completely or mainly by the stimuli from the environment. This is very similar to the other humanist ideologies' belief that humans are blank slates and genetic factors play a negligible part in shaping human behavior compared to environmental factors.

spans, most of the people who think they're dealing with "serious" things on-line are either chasing some sort of a conspiracy theory or concerning themselves with societal problems that are more typical of the 19th century than of the present day. Lorenz remarks that even scientists can be the victims of indoctrination. But it seems he himself was a victim of indoctrination, since he abstained from facing reality: Technological development is the root cause of all the problems that Lorenz investigates in this book; however, he never mentions technology itself as the main factor that underlies all of the problems he examines and beats around the bush throughout the book.

This is the typical attitude of today's scientists or public intellectuals. When they talk about climate change, habitat destruction, collapse in biodiversity, chemical or nuclear pollution, psychological problems, addictions (from Internet-related addictions to substance abuse), malaise and meaninglessness that afflict a large number of people, ever more ubiquitous surveillance, extreme political polarization, the loss of objective truth in public discussion, the threat of nuclear annihilation, mass unemployment due to artificial intelligence, etc. they never see and show *technology itself* as a problem. They often remark that the "correct" application of technology or more advances in technology will solve these problems. More importantly, nearly nobody mentions the looming dangers that lie ahead of us *in the context of the technology problem*: the complete destruction of the biosphere's functions that make complex life on Earth possible, transforming *Homo sapiens* through genetic engineering to a completely different organism, supersedence of humans by intelligent machines, the complete subjugation of wild Nature on Earth, etc. These will surely make all our mainstream political bickerings meaningless trivialities. The vast majority of scientists and public intellectuals are unable to face these problems *in the broader context of the technology problem.* They might mention one or two of these problems, and they might even offer some "solutions" to some of these problems, but none of them discusses these matters *in their real context while pointing towards their real cause.* They can't do this either due to social pressure or because they themselves are victims or parts of indoctrination. And meanwhile, humanity goes towards these dreadful outcomes like a sleepwalker.

8. Nuclear Weapons

The last problem Lorenz investigates is nuclear weapons. According to Lorenz, the problem of nuclear weapons is more concrete, less complex, and easier to understand than the other problems he investigates. For this reason, it is the easiest one to solve. "We" just need to convince "people" not to use and produce these weapons, and to eliminate the existing stockpiles. These beliefs are extremely naive. No assurance, no argument will convince the states to forego these weapons. As long as nuclear technology exists, some states will want to keep this extremely potent weapon in their arsenal. Moreover, the current war in Ukraine and the crises over Taiwan are demonstrating that nuclear war isn't such a faraway possibility as it was believed immediately after-

ward of the Cold War. Fifty years later the publication of Lorenz's book, the danger of nuclear war is still looming over us.

By Karaçam at October 29, 2022

Email ThisBlogThis!Share to TwitterShare to FacebookShare to Pinterest

Labels: 68, competition, environment, genetic decay, indoctrination, internet, konrad lorenz, leftism, nuclear weapons, overpopulaiton, propaganda, social media, technology, tradition, wild nature

Book Summary and Review III: The Myth of Artificial Intelligence: Why Computers Can't Think the Way We Do — Erik J. Larson

Saturday, August 19, 2023

Introduction

In this paper, we will review Erik J. Larson's book, *The Myth of Artificial Intelligence: Why Computers Can't Think the Way We Do.*[1] Larson's observations on current AI algorithms and his discussion on differences between human and machine intelligence prompt us to think deeper about AI, human and machine intelligence, AI's function in the techno-industrial system, and the conditions of its development. And we should think deeper on these issues to see beyond the haze of utopian or dystopian sensationalist claims about AI. According to Larson, the myth about AI is the belief that the field of AI is approaching towards a generally intelligent machine by the methods it utilizes as of now. According to this myth, no conceptual breakthrough is necessary; we only need to develop further the current algorithms and hardware to reach artificial general intelligence (AGI.) Moreover, the myth purports that the coming of AGI is inevitable. The myth of AI has another dimension related to this: Human mind is a more developed version of current machine learning algorithms, but it is not fundamentally different from them. Since there is no fundamental difference between the human mind and current AI, further developments in AI will eventually reach a human-like general intelligence. Larson says that this aspect of the myth denigrates the human mind, causes distrust about its abilities, and might constitute the biggest obstacle to reaching AGI.

[1] Erik J. Larson, *The Myth of Artificial Intelligence: Why Computers Can't Think the Way We Do,* Belknap Press, 2021.

We agree with Larson that today's AI algorithms and the human mind are fundamentally different. But we reach this conclusion from a different perspective. Larson has a humanistic view of human intelligence. He sees the human mind as a general-purpose cognitive organ. This view regards human intelligence as something unique with a mysterious essence. Though Larson never explicitly says that the human mind has a mysterious essence that makes it unique, from his observations about the human mind and his discussion about the differences between human and machine intelligence, it is clear that his view of the human mind is humanistic. This view inevitably tends to regard human mind as unique and mysterious. In contrast, we believe that the human mind is shaped by evolution. It is adapted to solve reproductive problems our species faced during its evolutionary history. The human mind is fundamentally different from today's AI (and will be fundamentally different from a future possible generally intelligent machine) because evolutionary pressures humans faced were unique to our species. Today's AI algorithms are developing in fundamentally different conditions for solving different problems. That is why human intelligence is fundamentally different from machine intelligence, not because it has a mysterious capability that makes it a general-purpose cognitive organ.

We begin by discussing the differences between humanistic and evolutionary views of the human mind. We then summarize the obstacles to AGI discussed by Larson. This discussion allows us better understand where the field of AI stands today and the characteristics of today's AI systems. We then discuss the aims of the techno-industrial system for developing AI. What could be the expectations of its developers from AI? This discussion takes us to think about the role of AI in the system. To what problems and fields it could be applied, and what could be the consequences of its use?

Humanistic vs. Evolutionary View of the Human Mind

According to Larson, the human brain is a general-purpose cognitive organ. It is not narrow and task-oriented. It can learn and perform diverse tasks such as playing chess, driving a car, speaking a language, etc. Larson says that "intelligence of the sort we all display daily is not an algorithm running in our heads, but calls on the entire cultural, historical, and social context within which we think and act in the world." He thinks that the human mind has a general "learning" ability. The human brain does the same things when it learns to speak, drive a car, solve mathematical equations, and detect cheaters in social situations. Larson's conception of the human mind, the humanistic view, is prevalent in social sciences. According to this, the human mind consists of general purpose or content-independent cognitive mechanisms. The human mind has an essence that makes it conscious, which gives it the ability of understanding and learning. As a domain-independent general-purpose information processing system,

the human mind would learn everything from scratch by observing its environment. Thus, it would be equally easy for human minds to learn to walk, speak, and engage in abstract logic.

Larson contrasts these purported abilities of the human mind with the narrowness of today's AI systems. AI systems are not general-purpose, and they are task-oriented. For example, an AI system that can play GO and beat the best human players cannot play chess. Larson claims that without a change in the perspective and a conceptual and theoretical breakthrough, today's approaches to artificial intelligence wouldn't be able to surmount the narrowness problem and reach human-like general intelligence. Larson's critique of the AI field and his explanations about the shortcomings of current methods are illuminating in understanding where the field stands today. Some of his observations offer antidotes against the exaggerated claims of doom or boon about the inevitable coming of AGI and superintelligence. However, since his starting point is an erroneous conception of the human mind, he tends to underestimate the potential of the AI field.[2] Despite emphasizing page after page the fundamental differences between human and machine intelligence, he falls into the trap of anthropomorphism. His only reference point for intelligence is the erroneous humanistic view of human intelligence. He cannot see that Darwinian selection could shape fundamentally different intelligence through different evolutionary pressures. To appreciate this fact, we should turn to evolutionary psychology and its findings about the human mind.

Larson divides the capabilities of intelligence into two domains: System X capabilities (narrow capabilities such as playing chess, making complex arithmetic computations, memorizing the whole Internet, and coughing up this memorized data), and System Y capabilities (broad capabilities such as understanding, creating novel insights and ideas, reaching synthesis using available information, etc.) Larson says that we can build algorithms exceptionally intelligent in System X capabilities. But we cannot do the same thing about System Y capabilities because we do not know how to simulate those capacities in code; we do not know how to reflect them in algorithms. And without System Y capabilities, we wouldn't be able to design machines that have general intelligence.

According to Larson, we should design machines with System Y capabilities to create AGI. Larson says that we are not able to simulate those capacities in code. But this is not an accurate picture of the reality. In fact, the problem might be more fundamental than that. We not only cannot code those capabilities in algorithms, we don't know what these capacities are and how our brains manifest those capabilities. Understanding, learning, creativity, etc., are concepts that are extremely broad. They are inadequate to describe what really happens in our brains when we "learn," "understand," or "create." For example, "learning" gives the impression that the human mind does the same thing when it learns different things. As if "learning" is a well-defined

[2] Sometimes, paradoxically, he underestimates the challenges artificial general intelligence would entail. We will see an example of this below.

cognitive operation that is the same for every talent: Learning to drive a car and speaking a language is the same. But this is not so. Neural mechanisms for learning a language and driving are distinct, and they are at different parts of the brain. In the case of language, we have specialized structures shaped by evolution to make us speak and understand the spoken language: Wernicke's and Broca's areas. Therefore, learning a language isn't the consequence of general learning ability. It is the consequence of neural mechanisms that evolved to make us speak and understand what is spoken. Evolutionary psychology has demonstrated that the human mind is not a general-purpose cognitive organ but a bundle of specialized cognitive mechanisms that evolved to solve recurrent reproductive problems.

Larson criticizes today's AI systems as being narrow. He says that they are only good at solving specific tasks. For example, an algorithm designed to play Go cannot recognize images; an algorithm designed to recognize images cannot chat with humans. Even for seemingly similar tasks like playing different board games, an algorithm designed to play Go cannot play chess. Larson contrasts this narrowness of AI with the general character of the human mind. We can learn different tasks and perform those tasks reasonably well. The same person can play go, chess; recognize images; drive a car; speak languages, and understand spoken words. But, as we said above, evolutionary psychology has demonstrated that we are good at many tasks not because we have a general-purpose brain but because we have many special-purpose neural mechanisms that evolved to solve different recurrent evolutionary problems.

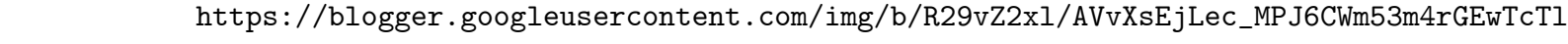
These mechanisms evolved to solve recurrent adaptive problems such as survival and growth (food acquisition and selection, finding a place to live, combating predators and other environmental dangers, combating disease), mating strategies (short-term and long-term mating strategies of men and women), problems of parenting, problems of aiding genetic relatives, etc. The human brain consists of layer-on-layer of these ad hoc mechanisms. According to this view,

Rather than a single general intelligence, humans possess multiple intelligences. Rather than a general ability to reason humans have many specialized abilities to reason, depending on the nature of the adaptive problems they were designed by selection to solve. Rather than general abilities to learn, imitate, calculate means-ends relationships, compute similarity, form concepts, remember things and compute representations, evolutionary psychology suggests that the human mind is filled with many problem-specific cognitive mechanisms, each designed to solve different adaptive problems.[3]

Some evidence shows that not even our logical reasoning is general or content-independent. Humans are better at reasoning and solving evolutionarily relevant problems, problems that strongly affect our reproductive success. One of the clearest demonstrations of this fact is the Wason Selection Task. In this task, when the question (conditional hypotheses of the form *If P then Q* is violated or not) is formulated as an

[3] David M. Buss, *Evolutionary Psychology: The New Science of the Mind*, Routledge, 2019

abstract problem, less than 25% of college students complete the task correctly. When the question is formulated in a way that requires the participators to detect cheaters, their performance increases dramatically. This time more than 75% of the subjects completed the task correctly. See below two Wason selection tasks that have identical logical structures:[4]



Humans are vastly better at solving the same logical problem when it requires them to detect cheaters. When the problem is formulated as in "b" above, it is easy to see why we need to check what the 16-year-old is drinking and the age of the person drinking beer, and it is equally easy to see why it is not necessary to check what the 25-year-old is drinking and the age of the coke drinker. It is much harder to reach the same conclusion at "a" for "D" and "7" when the same problem is formulated abstractly."[5] People are better at solving the problem in "b" because detecting cheaters is an evolutionary relevant problem. People who cannot detect cheaters will forego their resources to cheaters and will be at a reproductive disadvantage. People who are good at detecting cheaters will outproduce those who are not good at it. We are good at solving social contract problems because we have specially evolved cheating-detecting algorithms.

The human brain isn't content-independent and general purpose for good evolutionary reasons. Since adaptive problems (finding food, shelter; decision on fight or flee; mate selection; etc.) have extremely wide-range applications, learning all the instances and different forms of them one by one would be very inefficient. Humans make decisions on how to behave in evolutionary-relevant situations, and these behaviors have consequences on their reproductive success. However, individuals cannot assess the long-term reproductive success of their decisions. Only natural selection can do that. That means that individual "learning" cannot use the result of those decisions as criteria for successful behavior. As a result, Darwinian selection acts on the specific neural mechanisms that create those behaviors and selects those mechanisms that produce relative reproductive success. These are innate mechanisms that evolved to solve recurrent adaptive problems. These mechanisms lead us to certain behaviors in evolutionarily relevant occasions: preferences in mate selection, cheater detection, fight and flight responses, suspicion against strangers, disgust about certain smells and sights, compassion and aggression depending on the situation, etc. We have built-in motivational systems such as the dopamine system and emotions and feelings that drive us to certain behaviors. These are the things that make us autonomous.

[4] Jerome H. Barkow, Leda Cosmides, John Tooby; *The Adapted Mind: Evolutionary Psychology and Generation of Culture*, Oxford University Press, 1995, p. 182.

[5] People perform differently in "a" and "b" not because the problem in "b" is more familiar than "a." Cosmides and Tooby formulate the question at "a" in a more familiar form, but again in a way not about detecting cheaters. People perform significantly worse in this case also. See *ibid.*

These observations demonstrate that human intelligence isn't general-purpose as today's machine learning algorithms. The human brain is the product of an evolutionary process, and it was designed by natural selection to solve recurrent adaptive problems. The human brain is a bundle of these ad hoc mechanisms (algorithms) that are adapted to solve specific problems. So, the fact that today's machine learning algorithms are content-specific and designed to perform on narrowly-defined tasks cannot be used as an argument to rule out the possibility that today's machine learning algorithms could be scaled-up to fully autonomous artificial intelligence. Today's AI systems are good at fulfilling specific tasks because they are designed that way. But this does not mean they are bound to remain separate and cannot communicate with each other. Different algorithms specialized in diverse tasks might communicate with each other and constitute the layers (ad hoc mechanisms) of a future general machine intelligence. Today's narrow algorithms might be the rudimentary first components of a future fully autonomous machine intelligence. For example, more general-purpose algorithms like ChatGPT could call narrower algorithms that specialize in specific tasks (playing chess, image recognition, etc.) to carry out those tasks.

Larson never considers this possibility and criticizes Watson, an AI system developed by IBM to challenge the human contestants at *Jeopardy!*, precisely for using subsystems. He says that Watson uses a strategy based on the idea of a society of minds. It consists of numerous sub-modules responsible for specific tasks and reaches its final decision via the concerted action of these sub-modules. Larson discusses the techniques and algorithms Watson uses to show that it doesn't have any real understanding. From his observations on Watson, one gets the idea that Larson regards as intelligent only those cognitive operations that we cannot explain explicitly. If someone were to explain in specific terms what constitutes exactly human understanding, the exact information processing mechanisms of the human mind, Larson would probably say that humans don't have real understanding. He wants intelligence to be something mysterious, and when its constituent parts and the exact operations that produce it are explained, it becomes a pseudo-intelligence. According to Larson, the intelligence demonstrated by Watson is not genuine because so much human planning and care went into its design, because it uses lots of specific sub-modules to decide, because it fetches the answers from Wikipedia, etc, etc. For Larson, genuine intelligence is something we cannot explain.

Human brains evolved under specific evolutionary pressures that were unique to our species. Machine intelligence also evolves subjected to Darwinian selection. Large organizations (corporations and states) develop AI algorithms. These organizations are in an unconscious competition with each other. Organizations that have the most conducive characteristics to their propagation and survival are the ones that survive and propagate themselves. These organizations use AI to solve practical problems they encounter. They try to increase their efficiency and gain an advantage in their competition against other organizations. AI systems that bestow benefits to these organizations will be selected (through an unconscious Darwinian selection) during this

process. So, evolutionary pressures operate on machine intelligence as well. Machine intelligence also tries to solve adaptive problems. However, these adaptive problems would be very different from the problems human minds evolved to solve. As a result, machine intelligence probably would be quite distinct from human intelligence. But this doesn't mean that machine intelligence cannot reach full autonomy (and this is basically what people generally mean when they talk about general intelligence). After all, human intelligence is a product of material factors. It doesn't have a unique essence (an essence beyond matter) that makes it fundamentally different from other intelligences.

However, the AI field should surmount formidable obstacles to reach that level. Larson's discussion of these obstacles gives us a good understanding of where the field stands now and the hurdles ahead to reach that level. The road goes to that level (if it ever arrives it) is long and arduous.

Obstacles to Artificial General Intelligence

I. Problems of Deduction

Until the 1990s, the AI field was dominated by the deductive approach. According to this, programmers would spoon-feed the machines virtually all the possible deductive inferences. They would construct the thinking ability of the machines from scratch. For example, the Dartmouth workshop proposed this:

We propose that a 2-month, 10-man study of artificial intelligence be carried out during the summer of 1956 at Dartmouth College in Hanover, New Hampshire. The study is to proceed on the basis of the conjecture that every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it. An attempt will be made to find how to make machines use language, form abstractions and concepts, solve kinds of problems now reserved for humans, and improve themselves. We think that a significant advance can be made in one or more of these problems if a carefully selected group of scientists work on it together for a summer.[6]

Of course, these researchers would understand that it wasn't so easy "to describe every aspect of learning or any other feature of intelligence," and "using language, forming abstractions and concepts, solving kinds of problems now reserved for humans" were not the kinds of things that could be programmed in one summer. The number of deductive inferences that needed to be determined and coded into machines was impossibly high. In fact, as Larson demonstrates, even if it were possible to spoon-feed all the possible deductive inferences to a machine, this wouldn't be enough for general intelligence because deductive reasoning has inherent shortcomings.

[6] See the Wikipedia article on the Dartmouth workshop: https://en.wikipedia.org/wiki/Dartmouth_workshop

A well known example of a deductive reasoning is below:

All men are mortal.

Socrates is a man.

Therefore Socrates is mortal.

The first two statements are premises, and the last one is the conclusion that we infer from these premises. As Larson says, "deduction supplies a template for 'perfect' and precise thinking for humans and machines, and primarily for this reason it has been investigated in mathematics and the sciences, and used successfully in several important applications in the field of AI." But Larson adds the following caveats about deductive reasoning: it is relatively easy to determine whether deductive arguments are valid or not using formal rules. The argument is valid if the conclusion is true whenever the premises are true. But this doesn't say anything about the soundness of the argument. For example, consider the following valid argument:

If it's raining, then pigs will fly.

It's raining.

Therefore, pigs will fly.

In this argument, the premises are false. So, deductive rules themselves don't say much about the truth of those arguments. We need to rely on empiric knowledge to know the truth value of premises, and this depends on commonsense knowledge about the world. Deductive reasoning can be coded into machines, but without commonsense knowledge, machines would make silly errors.[7] On the other hand, deductive reasoning, on its own, wouldn't solve the problem of relevancy. Larson gives the following example:

All males who take birth control pills regularly do not get pregnant.

A man takes his wife's birth control pills regularly.

Therefore, the man does not get pregnant.

[7] For humans, it is easy to determine the truth value of the premises of this example. Because we have common-sense knowledge. And much of this common-sense knowledge is innate. Machines don't have this common-sense knowledge, and to bestow them with this knowledge is daunting. We will return to this point below.

That is a sound and valid deductive argument, but it is totally irrelevant because men don't get pregnant anyway. Larson says that a robot might have vast data of arguments like these, but it wouldn't understand anything; it wouldn't know what's relevant and silly. To surmount the relevancy problem, knowledge of causation is necessary. Machines should know if some event actually brings about a result or makes something happen. However, detecting causality is daunting because real-life events are complex; they have many possible causes. As Larson points out, deductive reasoning cannot establish causality.

As a result of these inherent weaknesses of the deductive approach, the AI field entered into one of its so-called "winter" periods, a period where enthusiasm, hope, and funding for the AI field wanes. However, the coming of the internet and the development of more powerful processors started a new AI summer during the 90s. This time, the field would use another type of logical reasoning: induction.

II. Problems of Induction

Induction is to reach general hypotheses from particular observations. A famous example is that after seeing lots of white swans, someone might conclude that all swans are white.[8] Or if we observe a traffic jam in a particular neighborhood after each football match, we would conclude that after this match, we will experience a traffic jam in that neighborhood also. Inductive reasoning gives us the ability to predict. We make predictions based on our previous observations and experiences. However, conclusions reached using induction cannot be proved or guaranteed; they are always provisional. As Larson observes, enumeration (the number of samples we observed) is very important in inductive reasoning. As the number of observations increases, we assume that the conclusion that we reach is closer to certainty.[9] An example of inductive reasoning is below:

N swans observed have been white [where N is some large number].

Therefore, all swans are white.

Inductive reasoning has a probabilistic dimension to it as well. A well known example is the following one:

Seventy-three percent of randomly sampled voters are for Candidate X.

Therefore, Candidate X will get about seventy-three percent of the votes.

[8] Until seeing a black swan, of course.

[9] Of course, it depends on the total number of the population.

In the example above, we use an observation based on a sample from a broader population to reach a conclusion about this population. Most of the time, the conclusion reached in this fashion will be valid, but it cannot be guaranteed a hundred percent. Some unexpected factors could cause it to be wrong.

Modern AI (machine learning algorithms) relies on this kind of statistical analysis and inductive reasoning. They detect patterns in a given sample and try to locate where in that pattern a new example would fit. They are simulations of real-life events; they try to approximate them. In fact, they don't try to simulate the events themselves, only the outputs of these events. Using past samples (spam emails, for example), they try to classify a new occurrence (whether a given email is spam or not). The same logic is applied to different problems such as image and voice recognition, content classification and suggestion, go or chess-playing, etc. Since real-life events are very complex, their machine-learning simulations can only be approximations. Since their knowledge is limited to the sample to which they are exposed, they cannot anticipate unlikely occurrences.

Machine learning algorithms have recently become so successful because Internet has provided lots of data to them. With more data, these algorithms become better at classifying new examples and predicting outcomes, but more data improves their performance to a certain extent. Sooner or later, models get saturated and cannot be improved by adding more data. More data doesn't solve the problem of long-tail, infrequent events that could have immense consequences in real life. That is the reason, despite achieving spectacular results at tasks that have limited scope (such as playing chess, go, content classification, and image or sound recognition), machine learning algorithms couldn't yet master the tasks that require them to grapple with all the details and unexpected events of real-life events such as fully automated driving.

In sum, machine learning algorithms demonstrate every weakness of inductive reasoning. As Larson says, in dynamic real-life environments, there is constant change. Change occurs in both predictable and unpredictable ways. That makes decisions based on induction problematic because there will always be things that will surprise the assumptions made based on past experiences. Inductive reasoning might work well in predictable environments with limited rules, such as board games (go, chess, etc.). But machines that rely on induction are not very good at navigating dynamic and complex environments. As Larson says, the main shortfall of current approaches is due to this fundamental problem of induction. Induction, inevitably, requires us to believe that "instances of which we have had no experience resemble those of which we have had experience."[10] In other words, during induction, we have to extend our experiences based on observed examples to unseen examples, and there is no guarantee that they will hold. Larson points out that more powerful learning approaches (data, observation, or equipment based) that rely on inductive reasoning cannot overcome these shortcomings. According to Larson, the AI field needs a new conceptual approach, a

[10] Larson quotes David Hume here.

fundamentally new method to create artificial general intelligence. Adding new data and computing power to current methodologies (inductive and deductive-based) will not solve the inherent problems of these approaches.

III. Problems About the Common-Sense

Another big obstacle to AGI is the common-sense or world knowledge problem. Minds should have many default assumptions about the external world to navigate in real life. We cannot perform even the most basic tasks without these assumptions. These assumptions are about our environment: the objects in those environments, their relation with each other, whether they are solid, breakable, wet, etc. We know what solidness, wetness, fragileness, and flexibleness mean. We know that solid objects cannot pass through other solid objects. Our minds have many assumptions (the frame) of these kinds to achieve everyday tasks. These assumptions are innate, or we have the capacity to learn them quickly through our experiences. We're not even aware of their existence most of the time, and we cannot imagine how widespread they are.

Larson says that common-sense is a rich understanding of the world and mainly requires two things: everyday knowledge about the world and inferential capacity to make use of this knowledge. Common-sense knowledge about the world is extremely wide. It includes, among other things, assumptions about the objects in our environment: knowledge about the categories of these objects like man-made tools vs. naturally occurring objects, living vs. non-living things, categories of animals, the difference between animals and plants; possible functions of the man-made tools; cause and effect relations; uncertainty; other agents' beliefs, desire and intentions; etc. Larson says that a field in computer science (knowledge representation and reasoning) tried to face this challenge to no avail. According to Larson, current approaches to AI cannot surmount this problem. The field needs a conceptual breakthrough, not better ways of doing the same things.

Larson tells us about a project conducted by DARPA that tried to spoon-feed computational systems with everyday knowledge like *Living humans have heads, Sprinklers shoot out waters, Water makes things wet, etc.* Larson himself was involved in this project and explains why it failed. Larson gives two reasons for this failure. First, most of what we know about the world is implicit. We bring our knowledge into consciousness and make it explicit only when circumstances require it. So, it was not possible to exhaustively spoon-fed our world knowledge into machines. Besides, this implicit knowledge about the world is enormous. Spoon-feeding a computer with common-sense knowledge would take a lifetime, if not more.[11] Moreover, even the exhaustive list of all the common-sense data points wouldn't be enough. In addition to that vast database,

[11] For example, an exhaustive list of common sense knowledge should include this: *pouring a liquid into a glass container with no cracks and only one opening will fill it up.* It looks so simple and obvious to us, but machines have no clue about such simple facts.

machine intelligence should be able to use these data in relation to each other. It should know the connections between the data points and the relations between them.

In sum, it is not possible to teach computers all the things about the real world. We cannot teach them all the things we know about the world because this knowledge is hopelessly broad, and even we ourselves don't know the extent of our real-world knowledge. Most of this knowledge is implicit and unconscious. On the other hand, computers should put all this knowledge in a structure by which they can evaluate and use them in relation to each other. They should know how each fact in that database is related to another. That is a daunting task because these relations are not static and can arise spontaneously. It means that two items in a real-world knowledge database that look initially unrelated might become related in a real-world event. Therefore, machines should have inference abilities to make sense of this vast knowledge to act sensibly in real-life situations.

Larson's Magic Solution: Abduction

According to Larson, the field should figure out how to express as computer code abduction to surmount these obstacles. Abduction is a type of logical inference distinct from the well-known two logical inferences, induction and deduction. Larson claims that abduction is the capacity that gives humans the ability to guess, hypothesize, or intuit. These abilities go beyond mere calculation. Whereas calculation connects known dots (applying the rules of algebra, for example), intuition or guesswork explains what these dots mean. It is about reaching an original conclusion by using the available data.

Larson explains with the schema below why abduction, induction, and deduction are distinct logical inferences and cannot be converted into each other.

As can be seen in the table above, abduction is, in fact, a logical fallacy in propositional logic. That is why, says Larson, deduction or induction cannot be converted into abduction. And if intelligent inference requires abduction, we cannot get there through deduction or induction. AI scientists should find a way to code abduction into machines.

Larson defines abduction as reaching conclusions based on observations. However, in abduction, conclusions don't follow observations mechanically. During abduction, we conclude through hypothesizing. Hypothesizing is very close to guesswork, but it isn't pure random guessing, either. "We guess, out of a background of effectively infinite possibilities, which hypotheses seem likely or plausible." Larson gives the below example:

The surprising fact, C, is observed.

But if A were true, C would be a matter of course.

Hence, there is reason to suspect that A is true.

According to this, abduction is concluding about the things that rarely occur. Surprise events that fall at the long tail of a distribution. These surprise events are a problem for machine intelligence only capable of induction. But a human mind, when confronted with such occurrences, can make adequate hypotheses about these occurrences and guess their causes. For example, if Julie doesn't work on Saturdays, a person who sees her at work on a Saturday would assume all sorts of things that would explain why she is at work: she might be working extra hours, or she might be called in to cover someone who is sick that day. But a machine intelligence that is only capable of induction would face a long-tail problem. Larson says that in our daily lives, we constantly use abduction. Even seeing a flower and deciding to which particular species it belongs is an abduction: We hypothesize about the possible classification of that flower. Besides, we constantly update those conjectures according to the information we receive from the outside world. We keep those conjectures that are corroborated by the facts and discard or revise those that are not. He calls this the defeasible nature of abduction. In short, our understanding of the world is a combination of abductive conjectures on the one hand and testing of these conjectures with inductive and deductive inferences on the other hand. Deduction, induction, and abduction work in conjunction in the human mind:

Once an intelligent agent (person or machine) generates a conjecture [...] downstream inference like deduction and induction make clear the implications of the conjecture (deduction) and provide a means of testing it against experience (induction). The different logics fit together: "Deduction proves that something must be; Induction shows that something actually is operative; Abduction merely suggests that something may be." Yet it's the *may* be –the abduction– that sparks thinking in real environments.[12]

Larson sees and presents abduction as a magic formula. If AI scientists could figure out a way to code into machines abduction, they would, at last, create an artificial general intelligence. For Larson, abduction is an all-encompassing capability that bestows on the human mind all the things it can do with its great flexibility and generality. We evaluate possible scenarios, create conjectures, see and name the objects we encounter, decide what to do when we face an odd situation, and demonstrate common-sense and real-world knowledge thanks to abduction. We explained above that Larson sees the human mind as a general-purpose cognitive organ. All the abilities of the human mind come from a general and all-encompassing capability. And Larson finds in abduction this all-encompassing capability, sort of a secret ingredient that, when added

[12] Larson, *ibid*, Chapter 12.

to induction and deduction, completes the formula and creates a general intelligence. Larson uses abduction in his book (the secret ingredient to "general intelligence," a general-purpose magic capability) as a blanket word that denotes mechanisms in our brains that we know nothing about their exact neurological functioning. What Larson expresses with abduction is, in fact, the product of a myriad of evolved cognitive mechanisms (which only together make us autonomous and flexible and give us common sense and word knowledge). Abduction is far from explaining what these mechanisms are. By attributing all the crucial abilities of the human mind to one type of inference (abduction), he does the opposite of what he tries to do with his book: he underestimates the problems of creating an artificial general intelligence that would have human-like qualities. If we could code abduction, we would create artificial general intelligence. But the matter is much more complicated than that. As we explained above, evolutionary psychology demonstrates that the human mind does all the things it does not because it has a general-purpose, all-encompassing ability that could be applied to every problem the human mind faces but because it has a myriad of ad hoc evolved problem-solving mechanisms that were shaped by evolution. Automating only one remaining elusive inference wouldn't be enough to solve the general intelligence problem. AI field should identify and code into machines enough ad hoc problem-solving mechanisms that would give the machines the same flexibility and generality humans have.

Does the AI Field Really Aim to Create a Human-Like General Intelligence?

Larson is convinced that the AI field wants to create an artificial human mind. But how do we know that that is the real aim of the field? It is true that in mainstream polemics, movies, and scary or jubilant superintelligence narratives of some experts, the final goal is portrayed as creating human-like general machine intelligence. That may be so for the individuals that work on AI. And some of the leading figures might claim that they want to create human-like machine intelligence. However, these people don't work in a vacuum, and their projects are funded by large organizations (states and corporations). These organizations are driven by unconscious mechanical factors, not by the desires and wishes of individuals who work for them. They try to solve practical problems they face and increase their efficiency. They develop AI technology for this reason. Circumstances drive them to harness more data and analyze it more accurately. They "want" to track, understand, and manipulate the masses. They "want" better forecasts about extreme weather events to prepare themselves better to reduce the damage. They "want" to solve enormously complex problems human intelligence cannot solve, like the protein folding problem. They "want" to calculate how plasma behaves in a fusion reactor to control it better in a magnetic field. They "want" to

eliminate humans from the economy because humans have all sorts of "problems" such as fatigue, lack of motivation, need to sleep and eat, and many other psychological and physiological traits that make them less ideal for these organizations than smooth-functioning machines. These large organizations do not "care" if the machines they create are conscious, have feelings, are creative or appreciate art, really understand their human interlocutors, etc. Since they focus on practical problems they face and the possible benefits of AI technology, they won't expend resources on developing human-like artificial minds. So, machine intelligence will evolve according to the needs of these organizations. What the individual AI researchers or entrepreneurs say about their aims doesn't matter much in practice. What they do in practice and what the large organizations that develop these artificial minds need matter the most.

According to Larson, the only real test to assess whether a machine is intelligent or not is the Turing Test. Larson falls into the trap of anthropomorphizing here. He will only regard those machines as genuinely intelligent if they demonstrate human-like abilities such as understanding, creativity, and intuition. But these are concepts that don't explain what they denote. We say that we understand something and feel the consequences of "understanding," but we don't know what happens in our brains when we understand. We don't know the precise mechanisms in our brains that make us understand. The same is true for learning, creativity, and intuition. They are ambiguous concepts and convenient for Larson precisely for this reason. Whatever the actual performance of an AI system, he dismisses it as not really intelligent by explaining how it does what it is programmed to do, as if he is unveiling the trick behind an illusion. For Larson, genuine intelligence is something unexplainable and mysterious. Larson would only see those intelligence as genuinely intelligent we cannot explain their operations. If there is an explanation for intelligence, then it is not genuine intelligence; it is only a trick that mimics intelligence. But the human mind has "real" intelligence. Since it has "real" intelligence, it should perhaps have an essence? Something beyond matter which makes it really intelligent? Larson's thinking seems to go that way. He says that thinking machines will have two inherent problems: originality and initiative. They won't be able to find their own problems. They will always do the things they are programmed to do. This discussion is about autonomy as much as about intelligence. Humans and other animals have their own purposes and move autonomously to fulfill them. These purposes are the products of evolution, and the ultimate aim of these animals is to perpetuate their genes. During their evolutionary history, they acquired cognitive mechanisms that direct them to do the things that would help them survive and reproduce. Humans, for example, don't always act consciously by calculating rationally the consequences of their behavior. We reach most of our decisions unconsciously. We make many decisions in our daily lives, and most of them are automatic. So, we do not always have originality and initiative as well. As a good humanist, Larson seems to think that our minds have a mystical trait that makes us intentional free agents: As if we create our intentions and purposes without any influence, and something inside us makes us act freely, following only our willpower. That is not the case. We also do, in

a way, the things which we are programmed to do. Our programmer is the evolution, and our programs are the ad hoc neural mechanisms that evolved to solve recurrent adaptive problems. Our minds don't have any mysterious, unique essence that makes us original, that bestows us free will. What Larson calls the intentionality or originality of humans are, in fact, the manifestations of their autonomy. And machines could also develop full autonomy through Darwinian selection (this time, it would be an artificial selection). Perhaps, today's narrow AI systems could become ad hoc problem-solving mechanisms of the future, more general and fully autonomous machines.

Larson discusses Stuart Russell's objections about the Turing Test. In *Human Compatible*[13], Russell points out that Turing Test is a human-centered test, and it is debatable whether the criteria it involves (understanding human language and engaging in an open-ended conversation) is suitable to assess machine intelligence. According to Russell, "the Turing test is not useful for AI because it is an informal and highly contingent definition: it depends on the enormously complicated and largely unknown characteristic of the human mind, which derives from both biology and culture. There is no way to 'unpack' the definition and work back from it to create machines that will provably past the test. Instead, AI has focused on rational behavior, and thus a machine is intelligent to the extent that what it does is likely to achieve what it wants, given what it has perceived."[14] Russell emphasizes here that the field of AI focuses on practical problems. And bestowing human-like emotions, drives, urges, and interests to machines might not be among those problems. Take consciousness, for example. As long as AI systems accomplish the tasks they are designed to accomplish, why would the organizations that develop AI "bother" whether these machines are conscious or not? As long as large language models like ChatGPT attract the attention of humans, lure them into speaking and sharing information with them, gather their thoughts and turn them into analyzable data points, inculcate into people the "correct" values, and manipulate their behavior why would their developers bother that if they really understand what the humans are saying? What matters is the competence of AI systems, not their consciousness.

Larson objects to these criticisms and says that they amount to dodging the problem. He says that since the beginning, creating a self-conscious machine was the ultimate aim of the field. And now, after realizing that the consciousness problem is much more difficult than initially assumed, some people declare that it wasn't their goal anyway. As we said above, Larson thinks that the AI field aims to create a conscious machine. However, apart from reminding us that from Hollywood movies to sensationalist claims and predictions of Ray Kurzweils and Elon Musks, machines that turn suddenly conscious have been the whole focus of mainstream debate about AI, Larson doesn't explain why consciousness and the whole plethora of human intelligent abilities should

[13] Stuart Russell, *Human Compatible: Artificial Intelligence and the Problem of Control*, Viking, 2019

[14] *Ibid,* p. 41.

be the goals of the field in practice. Mainstream focus on these sensationalist claims doesn't mean that the AI field really aims to create a human-like conscious machine. This shallow sound and fury about killer anthropomorphic robots or super-intelligent god-like machines that would kill all humans accidentally (or intentionally) or usher a new heaven on earth is mostly entertainment and distraction. It is a propaganda tool to divert attention from the immediate and more "mundane" threats of existing machine learning algorithms.

Function of AI in the Techno-Industrial System

Rather than focusing on this sensationalist propaganda and entertainment about AI, it would be better to look into the matter from a historical perspective to understand the role of AI in the techno-industrial system. Since the agricultural revolution, human societies have become more complex in an accelerated fashion. Their population, area, and the amount of energy and material they used increased constantly. Their activities required ever more data (statistics on production, consumption, and taxes; archives on ownership status and contracts; laws organizing the relationships among people.) This vast data was necessary for the new sedentary, complex societies that emerged with the agricultural revolution. After a certain threshold, this information overload became too much for the mere human brain power to handle. The writing was invented to keep records on production, taxes, ownership statuses, laws, etc. As societies got more complex, writing systems and data collecting, recording, and manipulating technologies developed further: from simpler number systems to Arabic numerals that use value systems on positions and the number zero. Computer technology represents a new phase in this development. It is a direct consequence of information inflation. Data storage and processing technologies have evolved from manual human brain power calculation to mechanic calculators of the 16$^{\text{th}}$ century to the big frame computers of the early 20$^{\text{th}}$ century to the supercomputers of the 21$^{\text{st}}$ century. Data collection technologies have evolved from manual data collection to face-recognition algorithms.

Computer technology has become a necessity, just as writing became a necessity when human societies reached a certain level of complexity. Each step further in the development of data storage and processing technologies has rendered human capabilities (mere brain power in calculating or memorization) in these areas more obsolete. Sometime during the middle of the 20$^{\text{th}}$ century, the information load became so huge that it became impossible for humans to manipulate this vast data. Humans continued to program the computers that carried out data storage and manipulation as computers began to replace human calculators.[15] Nowadays, algorithms that processors use to manipulate data have become so complex that the capabilities of human programmers are now becoming inadequate to program computers. With the accumulation of vast

[15] There were literal human calculators up until the 60s who were responsible for making arithmetic calculations.

amounts of digital data and the developments in processor technology, we now witness machines that program themselves (machine learning or artificial intelligence).

In sum, computer technology and AI is the answer the techno-industrial system gives to the ever more complexification of human societies and the resulting information glut. The system used and continues to use human brain power to conduct its activities and solve problems it faces. But human brain power is becoming more and more inadequate for the cognitive tasks the current level of complexity entails. As we explained above, this was the situation for a long time for mere human brain power. Throughout history, various tools have been used to complement human brain power, from writing to abacuses to mechanical calculators. After the industrial revolution, the information glut has increased so enormously that human brain power isn't sufficient anymore for the cognitive tasks of the system, even with all the appendages that help it. The techno-industrial system needs something more powerful, and AI is a potential answer. The system tries to develop a new cognitive organ for its needs.

We said above that through a process of Darwinian selection fully autonomous machines could develop one day, machines that have artificial general intelligence. This selection process is not unique to intelligent machines. All the cultural artifacts of humans (the products of human civilization not inherited by genes) are subject to Darwinian selection. These artifacts evolve through constant changes, additions, and upgrades. A selection process that is similar to natural selection drives this process. Those artifacts that bring advantages to the functioning of human organizations are retained and diffused. They are retained and diffused because they may increase the energy efficiency of a given process; they may make it possible to exploit a new energy source and create more destructive ways of applying violence; they may increase the speed of communication and transportation or bestow on human societies more effective methods of data collection, storage, and analysis. These cultural phenomena are parts of larger units, human organizations (companies, states, nations, etc.). Darwinian selection operates on these organizations as well. In fact, selection pressures that apply to cultural artifacts first act on these organizations and affect these artifacts through them. Cultural artifacts are selected according to the "reproductive" benefits they bestow on these organizations. Human organizations are integrated systems that have their own metabolisms and dynamics. Their ultimate aim is to perpetuate themselves. That is not something they pursue consciously; it just happens. Those organizations that have and develop the most conducive characteristics to perpetuate themselves are the ones that survive and continue to exist. Those that are not so good at these things are eliminated or absorbed by the more successful ones. So, there is an unconscious, mechanic competition among human organizations. They ought to improve their processes by finding more effective ways of doing things and enlarging their operations. They ought to absorb more material and energy and process them in their metabolisms more effectively.

Artificial intelligence entails enormous possibilities in that regard. We mentioned the problems related to the complexity above. Organizations that could solve these

problems would reap great benefits. Another crucial area AI is applied is the control of human behavior, the perennial problem of complex human societies since the agricultural revolution. Unfortunately, the techno-industrial system has made considerable progress in this area in recent years due to AI. The system has gained enormous capacities for surveillance and manipulation. It can now track ever more aspects of people's lives and dazzle them with massive intensity by hacking their dopamine system. It bombards people with a constant barrage of ridiculous and meaningless sounds and images. Many people have lost their ability to concentrate; their attention spans continue to decrease even more. Each new generation is affected even more intensely because each newer generation is subjected to this regime from an ever-early age, and the technologies of electronic lobotomy are progressing with each passing day. This internal siege of the masses makes it easier to tolerate the miserable existence modern life entails. On another front, AI bestows enormous advantages for an external siege through tracking technologies such as face recognition systems and data storage and analysis tools that lay bare desires, fears, relations, and daily practices of people. In *Industrial Society and Its Future*[16], Ted Kaczynski saw the control of human behavior as one of the biggest challenges of the technological system. Despite subjecting them to ever more indignities and forcing them to live ever more artificial lives in ever more unnatural environments since the publication of that work, the technological system has controlled human behavior to a large extent. AI has played an extensive role in this.

Apart from controlling human behavior, the techno-industrial system faces other challenges in its war against Nature. And AI could become one of its most destructive weapons in this war. First of all, AI technology could be applied in diverse sectors. It could work in nearly every domain. Today, it is already in use in such diverse fields as medical image analysis and drug design, algorithmic trading in finance and credit risk assessment, customer sentiment analysis, content generation with language models, in robotics (autonomous weapon systems, drones, automobiles, humanoid robots, manufacturing robots, etc.), the control and prediction of manufacturing processes, forecasting of demand, inventory management, the management of power grids, in tracking and assessing the student performance, in creating customized education programs, in monitoring crops, in precision agriculture, in weather forecasting, etc. In the future, AI could be used in personalized healthcare based on individuals' genetic and health data, robotic surgery systems might become more sophisticated, and AI systems could improve drones, ships, construction machines, and self-driving cars even more. The system could even try to automate entire cities with their transportation, logistics, waste management, and construction activities managed by an AI as an integrated autonomous system. The complete automation of production could also be possible. AI can create and manage manufacturing systems from the design phase to

[16] Theodore John Kaczynski, "Industrial Society and Its Future," in *Technological Slavery: Volume One*, Fitch & Madison Publishers, 2019.

the production phase. That would entail the integration of the design phase in software and the manufacturing phase in plants. Software programs used in the design of products would be in direct communication with the machines used in manufacturing, and the production facilities would be constructed according to the needs of this design. Imagine these as self-contained machine hives sucking enormous quantities of material and energy and transforming them into mass products. AI would be used in solving complex problems such as advanced materials development. If it could give the system the ability to construct materials atom by atom, the system would try to circumvent the energy and material scarcity it could face by attempting to manufacture them directly. Language models like ChatGPT could evolve to understand better context, emotions, and nuances in human communication. Thus, they could better lure humans to communicate with them and learn their desires, fears, and inclinations more deeply to inculcate better the values and worldviews conducive to the system's more effective functioning.

The system will utilize these diverse uses of AI to face the challenges related to climate change and biodiversity loss. The system is trying to update its energy infrastructure to adapt to climate change, a consequence of the system's functioning (burning of fossil fuels). That entails the electrification of energy use and production, the construction of so-called renewable wind and solar power plants, and the renovation of the electricity grids to accommodate this change. Electrification of energy production and consumption entails much more complex power grids that should accommodate the intermittency of solar and wind, with the addition of a massive new consumer of electricity, electric cars. It would need AI's data analysis and forecasting powers to design and run these complex energy networks. However, these more traditional methods might not be sufficient to mitigate the effects of climate change, and the system could try to take into its own hands the governing of the atmosphere.[17] In such a case, it would use AI to create more accurate and detailed climate models. It would try to predict the consequences of its meddling using AI if it tries to intervene directly in the processes of the atmosphere. The system's massive use of energy and materials and its extractive and transformative activities create all sorts of problems for the ecosystems of the Earth. Its activities are encroaching or even going beyond the planetary boundaries. The techno-industrial system is still dependent on ecosystemic functions to sustain itself. So it will attempt to ration the consumption levels of its members and try to monitor and control the ecosystems to better take advantage of them. The former would entail the near-total tracking of the daily lives of its members to ensure that they won't go beyond their allocated footprint. The face recognition and image recognition algorithms would track what people buy; AI systems would calculate the material and energy consumption implicit in those purchases. Smart cars would relay to an AI system how many kilometers their owner traversed, etc. For the latter,

[17] See the following article for the system's possible reactions to climate change: The Possible Reactions of the Techno-Industrial System to Climate Change.

the techno-industrial system would use AI-powered satellite data and remote sensing technologies to monitor the wild ecosystems. Drones would buzz over the wilderness and collect all sorts of data. The system would check the condition of the species (their population, health, etc.) The accumulation of undergrowth in the forests and the age of the individual trees would be monitored and assessed. With these kinds of data, the techno-industrial system would subject the wilderness to rational control and exploitation to ensure its "sustainable services." It is easy to see what this would entail: the attempt at total rational control and subjugation of wild Nature.

AI is a manifestation of the system's *fuite en avant.* It attacks the problems its existence creates from many angles using AI. However, the continuous development of AI and its application in diverse fields will only increase the system's complexity and related problems. The system could push the biosphere's limits using this technology even more, but this would create even more problems in the future. The gradual but relatively fast development of AI, following the cultural development pattern (an artificial Darwinian selection) we explained above, could one day produce a fully autonomous machine intelligence. This intelligence could have enormous capacities to control the physical world due to the advancements in robotics technology. The requirements of the large organizations that develop this technology will shape the characteristics of this intelligence. So, all the current polemics about the alignment problem are futile endeavors. The alignment problem expresses the possibility that future AIs may have goals that do not align with their human creators. This concept, as it is configured today, only deals with the problem of whether specific AI systems will follow the orders of humans and whether they will understand the humans' intentions correctly or not. However, since AI technology will evolve following a blind Darwinian process, it will be impossible to plan and direct the future developments of AI; it will be impossible to determine the characteristics of future AI systems. They will evolve together with the large organizations that develop them. We cannot control either of them: in the narrower sense, the evolution of particular AI systems, and in the broader sense, the human organizations that develop these AI systems. Besides, the alignment problem would be irrelevant from our perspective, even though it were to be solvable. And we mean this both in the narrow sense that this problem is defined today and in the broader sense of the complete control of the long-term development of AI with the human organizations that develop it. Even in an implausible scenario that humans control perfectly the future evolution of AI, the world these human developers would create will be a hellish nightmare of a "perfect" brave new world. We don't see a meaningful difference between what these machines and their human developers would do with the capabilities this technology entails. Both alternatives would be equally disgusting.

We mentioned the possibility that the future evolution of AI could create fully autonomous machines. We should think about this autonomy in two layers. At the lower level, there is the autonomy of certain technologies like fully autonomous drones, automobiles, or some software programs. At a higher level, we can talk about the complete autonomy of large organizations (companies, states, etc.) With the advent of fully

autonomous machines, large-organizations could become independent from humans. These organizations have their own internal dynamics and metabolisms, and humans cannot control their long-term evolution. In this sense, they are already autonomous. However, as of now, they need humans as actuators. The vital force that moves them is humans. Since these organizations are dependent on the existence of humans, they have a biological aspect. Thus, they could only exist if the ecosystems remain within certain limits, boundaries that allow humans to live. If the future development of AI makes them fully independent from humans, this will make them independent of biological processes as well. In such a case, the techno-industrial system could continue to exist even if the Earth's ecosystems are thoroughly devastated by chemical or nuclear pollution. Even if all the complex life on Earth vanishes, the techno-industrial system could continue to exist if it could develop AGI before collapsing. That would be the worst consequence of AI for wild Nature.

Larson never mentions such possibilities. His main concern is that the myth of AI relegates the human mind to a lesser position. For this reason, he says, we don't trust any more individual creativity and the power of geniuses. He fears that this belief aggravates the existing obstacles in front of AGI. His concern is not about AI itself but the myth about AI. Despite repeatedly exalting the uniqueness of the human mind and adoring it, he wants to promote the advent of artificial general intelligence. It is such a paradoxical stance. He doesn't seem to realize that AGI would inevitably make the human mind less valuable. If there is intelligence that does almost everything better than humans, what importance would the human mind have? If he really values the uniqueness of the human mind, why does he try to promote AGI? If he is not capable enough to see this glaring contradiction, there is only one explanation: he wants to leave himself to the safe bosom of conformism. In today's world, the veritable dogma is technology. In the mainstream, one can only critique technology to help its development. A total, fundamental critique of technology is not permissible. The only permissible critique of technology could be a restricted critique about possible dangers, or one can critique some approaches to technology to indicate their shortcomings, as Larson does in this book. These are always done with a blatant display of good intentions. Like every good expert who wants to be accepted by the intellectual circle he belongs to and society in general, Larson has to signal the good intentions of his critique; he has to show that he doesn't criticize the technology and techno-scientific development itself. He has to demonstrate that he only wants to contribute to AI's development by pointing out the weaknesses of current approaches.

Karaçam
karapinusnigra@gmail.com
By Karaçam at August 19, 2023
Email ThisBlogThis!Share to TwitterShare to FacebookShare to Pinterest

Labels: abduction, artificial intelligence, book critique, book review, chatgpt, deduction, erik j. larson, evolutionary psychology, induction, machine learning, the myth of artificial intelligence

Brave New World, 1984, and the Techno-Industrial System

Karagam (April 2021)

Introduction

Brave New World and 1984, two dystopian novels of the first half of the twentieth century, put forward two different visions about what the social consequences of the great technological explosion that started with the Industrial Revolution might be. Although George Orwell portrayed a very pessimistic picture in his 1984, he had a fundamentally positive view of technology; his starting point was the classical Marxist understanding of technological development. Thus, the terrible, totalitarian-collectivist society we see in 1984 is not a result of technological development itself, but a result of its distortion by a totalitarian dictatorship. Aldous Huxley, on the other hand, was concerned with the consequences of technological development itself and its inner logic. There is nothing in Brave New World that deflects technological development from its natural course. In Brave New World, technology itself, via the developments regarded as "progress" today by the technological propaganda, gives rise to the horrible form of society depicted in the novel, creating another dystopian society. In this paper, we will compare these two different visions about industrial society with the present technoindustrial system.

The Society of 1984, Dynamics of Its Birth and Its Qualities

When we look at what Orwell says in 1984 through Goldstein (one of the characters in 1984), we see that his philosophy of history consists of the classical Marxist class war: History progresses through the conflicts between different classes in society. Since the Neolithic Age, the structure of human societies has been almost the same with their main lines; there are three classes in societies: the lower, middle, and upper classes. The upper classes try to maintain their position, the middle classes try to replace the upper classes, and the lower classes aren't in a position to think of anything since the members of these classes spend most of their time engaged in daily physical labor. In

certain historical situations, the middle classes overthrew the upper classes. In doing so, they received the support of the lower classes by instrumentalizing concepts such as freedom, fraternity, and equality. But when middle classes replaced upper classes, they transformed themselves into new upper classes; new middle classes formed in their place, and thus societies returned to their usual three-layered form. However, the Industrial Revolution, for the first time in history, has created a possibility to change this hierarchical structure of societies.

According to Orwell, the Industrial Revolution has made it possible for the first time in history for every social class to live in material prosperity by increasing tremendously the production capacity of the society. Thus, for the first time, the lower classes, which constitute the largest segment of human societies, will no longer need to spend most of their lives in ordinary daily work to gain their basic physical needs (food, shelter, fuel, clothing, etc.). The fact that everyone in the society can have basic material needs without expending great physical effort will ensure that the living standards of people of all walks of life converge at a level that was formerly possible for only upper-classes. When people's material living standards converge in this way (when machine production allows everyone to own electrical appliances, cars, personal bathrooms, televisions, and the like), inequalities arising from material conditions within society will become meaningless. Everyone, including the lower classes who are freed from material constraints, will be able to develop themselves culturally and cognitively. Social conflicts arising from the problem of sharing the scarce resources of the society will disappear as a result of the realization of material abundance through technological development, and thus the hierarchical structure of human societies will also disappear. Orwell explains this as follows:

[I]t was also clear that an all-around increase in wealth threatened the destruction — indeed, in some sense was the destruction- of hierarchical society.[1]

For if leisure and security were enjoyed by all alike, the great mass of human beings who are normally stupefied by poverty would become literate and would learn to think for themselves; and when once they had done this, they would sooner or later realize that the privileged minority had no function, and they would sweep it away.[2]

So Orwell sees technological development as positive and good on its own. The material abundance that technological development would bring will make people more cultured and knowledgeable, people who become cultured and informed will not want a useless ruling class above them, and they will eliminate this "parasitical" class, and thus "freedom"[3] will become possible. This is the classical Marxist progressive view of

[1] 1984, Part II, Chapter IX.

[2] Ibid.

[3] Orwell defines freedom in a leftist and humanist framework. According to this, freedom is to be free from natural physical hardships thanks to the blessings of a human society that has subjugated wild Nature, and not being under political pressure, not being exposed to discrimination (class, race, religion, etc.), and with an income that will make it possible to enjoy the blessings of human society.

technological development. The danger Orwell sees about the future is that this positive dimension of technological development can be distorted by totalitarian dictatorships.[4]

What Orwell points to as the reason for the emergence of the totalitarian society in 1984 is the reaction of the upper-classes to the technological explosion that started with the Industrial Revolution which supposedly makes possible the abolishment of the hierarchical structure of societies. The ruling classes in 1984, by seeing this aspect of technological progress, tried to prevent the emergence of the results described above. In order to achieve this, they had to prevent the productive capacity of society from accumulating material wealth by building a totalitarian system. In doing so, they would annul the "liberating" power of the machine and ensure that people remained ignorant and poor. The two methods they used for this were the continuation of a constant state of war between neighboring states, thus preventing the accumulation of material wealth produced in wars; and banning thought and expression to eliminate empirical thinking and creativity, thus halting technological progress after a certain level.[5]

As a result of this deliberate policy put into effect by the ruling classes, the material living conditions of the society in 1984 are very bad. The environment in which people live, their homes, streets, and the offices they work in are falling apart physically. Elevators do not work; electricity is not available during the day and often goes off at night. Monotony and mediocrity prevail in the cities, there is no vitality in society. There are constant shortages in consumer goods; coffee, sometimes soap, or razor blades cannot be found at different times. The use of consumer goods is bound to quotas, and they are offered to people within certain limits; they have very bad quality. Food has no taste, and the ingredients are pretty poor quality and terrible.

The political system in 1984 is a single-party dictatorial regime with a socialist and collectivist ideology. Economic activity is completely controlled by the state. Society is divided into three classes: At the top are the internal party cadres. These are the people who form the ideology and determine the policy to be followed. They live in a special district of the capital and their living conditions are much better than the rest of the population. Below them are ordinary members of the party which constitute the middleclass of society. At the bottom are the "proles," who make up 85% of society. The living conditions of the proles are very bad; they live in a terrible physical environment. (Their conditions can be compared to the 19th-century British working class at the beginning of the Industrial Revolution.) Their sole concern is to

[4] He seems to have written 1984 as a warning for this threat. Many features of the totalitarian dictatorship described in the book were borrowed from the Stalinist dictatorship that prevailed in the Soviets at the time of the book's writing. It seems that Orwell saw the spread of this political system around the world as the greatest danger in the future.

[5] Orwell explains the inability of totalitarian bureaucrats to reduce technology to a point before the Industrial Revolution as follows: Reducing the technology to a point below the Industrial Revolution, and most importantly, halting the development of military technology would greatly disadvantage the states which do these things in the competition with other states and would result with the destruction of the ruling classes of those states.

survive day by day. Their lives consist of food, drink, football, and beer. Since they live in constant misery and poverty, they aren't able to think and act on more serious issues like the hierarchical structure of society, political events, the way of life they have, etc. Because, as stated above, the main purpose of the ruling classes in 1984 is to keep the physical conditions of the majority at a poor level, thereby preventing them from developing themselves cognitively and culturally and having sophisticated demands.[6]

The political system in 1984 strangles society, trying to control everything by physical pressure. There are no democratic elections, and a one-party dictatorship is a sole hegemon. Management techniques like constitutional rights, separation of powers were abolished. Free expression of ideas is never allowed, and thoughts are shaped by methods based on physical force. The media is under the control of the party. Everyone has a telescreen (an electronic device like a television) that must be present in their home, and it is strictly forbidden to turn it off. The party uses this tool both for propaganda purposes and to monitor and listen to the people. However, contents that are being broadcasted using this tool are dull and monotonous compared to the television broadcasts of today. They don't have the function of today's mass media that bewitches people with fun, violence, curiosity, sense of belonging, sex, and the like, and makes them forget the dull, monotonous, and unsatisfying dimension of their own lives. Its function is to carry out the propaganda in a vulgar and blunt way and detect those who are beginning to show signs of dangerous thoughts and attitudes. But when thought control and surveillance are done in blunt and obvious ways, as in 1984, they create enormous pressure and tension on people, and the accumulation of these pressures and tensions can have worse consequences than benefits for the social machine. Therefore, today's techno-industrial system has developed more subtle methods for the control of *thought and behavior.* This electronic device, as Orwell imagined it, would be much less effective than today's methods of electronic thought control. The society of 1984 controls people more through physical pressure rather than efficient and intelligent propaganda.

The world is divided among three super-states: Oceania, Eurasia, and Eastasia. These states are in a constant war with each other. The war between super-states in 1984 isn't a total war like the wars in the first half of the 20th century, and it does not play a decisive role in the daily life of the citizens of these states. Since these states are enormous in terms of geography, population, and economy, they cannot beat each

[6] We see that the masses of today's techno-industrial system, which have far better material conditions than the lower classes of 1984 on average, have a fundamentally similar attitude. Contrary to the beliefs of the progressives, the consequences of machine technology reducing physical labor and increasing material well-being didn't turn out to be people's dedication to "loftier" and "creative" activities. On the contrary, the indolent lifestyle created by technological development drags people into meaninglessness, creates psychological problems and dissatisfaction, and to suppress these problems to some extent, people immerse themselves in hedonistic pleasures: consumption, movies, TV series, computer games, pornography, etc.

other, and the state of war continues chronically. As we have already mentioned above, the ruling classes of these states continue to wage war deliberately to keep the material well-being of society in a miserable condition. Orwell wrote 1984 during the Second World War; this might induce him to think that war would become an ordinary feature of the great power relations in the future. But the historical developments in the real world were quite different in regards to warfare. The advances in weapon technology, especially nuclear weapons, made the war between great powers extraordinarily costly; we haven't witnessed an armed conflict between great powers since the end of the Second World War. On the other hand, states have not become cultural and economic autarchies, as described in 1984. On the contrary, the development of transportation and communication technologies has accelerated the economic and cultural integration of the parts of the globe and created an integrated global system with a connected physical infrastructure.

Both Brave New World and 1984 emphasize the need for complex social systems to weaken small-scale communities. The loyalty and devotion of people must be directed to the social system itself rather than to small-scale communities such as the family, extended family, local communities, tribes, etc. so that there is no concentration of power anywhere that can be a rival to the central authority of the system itself. The result of the disintegration of small-scale communities is that the power of the social system as a whole increases, but individuals become weak since they are isolated from each other.

Per the above-mentioned need, the ruling elite in 1984 tries to eliminate family ties, friendships, and other connections among people. Children are raised in a way that would make them loyal to the system itself, accepting its values and ideology rather than the values of their families. That is accomplished by indoctrinating children from an early age in various educational institutions (educational camps, schools, kindergartens, etc.). That prevents the families from instilling thoughts and behaviors in children that are contrary to the values of the system. In particular, the party doesn't want children to be loyal to their parents, and it wants them to be constant spies on them. Children thus become a real trouble for their parents: vicious informants who have penetrated the interior of their homes.

Another method used to weaken family ties in 1984 is the suppression of sexuality. Orwell mentions two reasons for the attempts to completely suppress sexuality in 1984: The first is to prevent men and women from approaching each other and forming intense bonds through sexuality. The second is that the energy that would accumulate in people thanks to the suppression of sexuality would be used to create a more intense bond with the regime and its ideology. In 1984, the party tries to reduce sexuality to a strictly functional and mundane activity of procreation which is necessary to perpetuate the social system.[7]

[7] The role that Huxley and Orwell assigned to sexuality in their dystopias is diametrically opposite to each other, and Huxley's utopia predicted the role that sexuality plays in the current techno-industrial

Orwell describes a society in 1984 that puts its members under enormous pressure from every angle. People live in poor material conditions, and the party strictly dictates and controls what they wear, what they say, how they work, their sexuality, and even what they think. Orwell viewed all these as necessary for future technological societies that would also like to keep their hierarchical structure. Because he believed that technology, when left to its natural course, would play a supposedly liberating role. According to Orwell's socialist point of view, the "perfect" society would be born through increased material well-being created by technological development. Machine production would absolve people from the necessity of pursuing fundamental basic needs, and thus, would make it possible for all segments of society to cognitively and culturally develop themselves. Thus, the classless, "free" society dreamed of by the leftist ideology would become possible. Only a totalitarian dictatorship could maintain modern technology and hierarchical society together. Orwell imagined an industrial society that would suppress thought and expression, would have miserable material conditions, and would try to maintain interior political stability by xenophobic hatred and war. And his counter-ideal would be another industrial society that has been dreamed of by progressives since the advent of the Enlightenment: A society in material abundance that would give its members the "freedom" to consume this material abundance, a society that would be democratic, peaceful, and constituted by culturally sophisticated members.

But the technological advancement itself -as the *Brave New World* correctly predicted, and the development of the present techno-industrial system has demonstrated-, despite the improvement of material conditions, the increased consumption possibilities, the sexual permissiveness, and the permission about expression and thought, destroys the possibilities of real freedom.[8]

The Society of Brave New World, Dynamics of Its Birth, and Its Qualities

Huxley's *Brave New World* shows us what might be the consequences of the advancement of technology with its inner logic—without being derailed by an evil dictatorship.

Brave New World takes place in 632 after Ford. The person who is alluded to here is Henry Ford. Ford is a sacred persona and worshipped religiously in *Brave New World*. The importance of Henry Ford in the real world is that he used in his automobile factory the first moving assembly line. That was a revolution in industrial production methods. Huxley regarded this as one of the most consequential factors

system much more accurately. We will return to this topic in the sections where we discuss *Brave New World* and the present techno-industrial system.

[8] Real freedom has nothing to do with doing what the system allows; it consists of having the possibility to meet one's fundamental needs with one's own abilities and initiative, individually or as a member of a small group.

that would shape the future of human societies. And indeed, the assembly-line method has formed the basis of industrial mass production and consumption. In this production method, the commodity to be produced is standardized; complex jobs are divided into smaller mechanical processes, and standard products are produced on assembly lines where unqualified workers work. The tasks these workers do are reduced to simple mechanical movements. This method brought an enormous increase in production capacity and consequently created the necessity of mass consumption. Industrial mode of massproduction and the necessity of consuming the commodities it produces created a closely knit cycle of production-consumption and shaped the characteristics of the way of life in industrial societies: Individuals turned into the mechanical pawns of a great collective in working life, and consuming the products created by this mode of production in their "spare time" became the sole meaning of their lives. Mechanical work and hedonistic consumption became the gears of an engine that feed each other. In Brave New World, Huxley shows us the logical consequences of this process.

The society of Brave New World is a project realized after world economy and human civilization nearly collapsed because of a war. It was recognized that the re-occurrence of a similar danger could only be prevented by a scientifically planned universal society organized on a global scale. To prevent social and economic crises and new wars, it was necessary to build a global society that would provide stability. And to achieve stability, members of this social system should be completely integrated and adapted to it; and feel happy and satisfied with it. For this purpose, people should live in an environment where they didn't feel any "negative" emotions. To this end, the society of Brave New World satisfies the physical needs of people (it is enough for individuals to fulfil the simple roles for which they have been produced), and they spend their lives with entertainment and consumption. The psychological problems like boredom, depression, meaninglessness that this kind of life brings are tried to be eliminated by sex (its reproductive function is suppressed to make it a simple hedonistic pleasure), consumption of commodities, holidays, and "feelies" (an electronic entertainment technique quite similar to today's electronic entertainment like movies, TV series, music, videos, etc.) People's minds try to be kept constantly occupied with fun and pleasure to suppress thought and negative emotional states. In case people still feel gloomy despite all these diversions, a psychoactive medicine called soma comes into play. Thus, the society of Brave New World tries to keep its members in an uninterrupted euphoric mood to ensure social stability. People are conditioned biologically in such a way that they won't have any desires that this society cannot fulfill, and any other desires they have are going to be fulfilled by society. They eat and drink as they want and have sex with whomever they want. They don't have worries about competition and success because their place in society is predetermined; they are produced according to the role they will take in this society. They don't have families, wives, and children; therefore, there are no intense emotional states such as sacrifice, jealousy, and longing that these close relationships can bring. They indulge in hedonistic pleasures after doing a monotonous job that doesn't require any talent and initiative.

Assembly-line production is also used for producing human beings. People are designed according to the roles they will assume in society and produced as mass commodities. People who are going to make the most monotonous physical tasks are produced by the Bokanovsky method as exact same copies. Huxley emphasizes here the killing of individuality by the mass production-consumption cycle. People who make the exact same mechanic movements while working try to divert themselves with the exact same entertainments: "Feelies", soma, orgy-porgy. The standardizing force of Brave New World is shown by the Bokanovsky groups: Mass-produced, genetically identical groups of people without individuality.

The sexual politics of Brave New World is completely different than 1984. In 1984, the aim is to suppress and reduce sexuality to a social task undertaken solely for reproduction purposes. In Brave New World, the aim is to turn sexuality into an act done solely for pleasure and entertainment by separating it from reproduction. Sexuality is encouraged from a very early age. Society promotes contraceptive methods and educates women thoroughly about them. Having an active sexual life is the expectation of society from people. But relationships should be short-term, and people need to change partners frequently. Family has been completely eradicated in Brave New World because new generations are produced in factories; people don't have kids, and relationships are short-term. The society of Brave New World solved its need (a need every complex society faces as we mentioned above) of eliminating small-scale communities permanently by severing sexuality's ties with reproduction, producing people in factories, and thereby eradicating family. In Brave New World, nobody belongs to a particular person, but everyone belongs to everyone else. The individual is a part of the social collective from his production to his death. Spending time alone, doing something solitary is regarded as a very bizarre and anti-social attitude. It is expected from the individual to lose himself in the social collective and surrender all of his uniqueness.

Huxley shows that those consequences of technological development regarded generally as "positive" (an increase of material "wealth," enlargement of consumption, and the eradication of negative emotional states by various entertainment techniques and drugs) are not at all positive; and the veritable consequence of all is the reduction of life to a drug-induced dream without any meaning. Because in such a life as it is in Brave New World, where all the desires of people regarding physical necessities and pleasures are satisfied by the social collective without a meaningful effort from their part, where people live in constant fun under the perpetual pleasurable stimulus, and where all the deep personal relationships have been eradicated, nothing remains that people achieve with their initiative and capabilities, and experience as their own doing. The feeling of meaninglessness and boredom this life creates is tried to be alleviated by "feelies", sexual orgies, psychoactive drugs like soma, etc. In this society, people are never alone. But the relationships between people are reduced to such a shallow state that they don't include any strong emotions like jealousy, rage, passion, longing, love, devotion, etc. In such a life, there is no place for desire, ambition, longing for success,

and victory. That means the eradication of all the possibilities of freedom and meaning of life.

As we saw, Orwell thought that the consequence of the increased material welfare would be the enlargement of the cultural and cognitive capacities of the masses—the supposed result of technological development when it is not perverted by a totalitarian bureaucracy. But Huxley demonstrated that despite the increased material standards, it is still possible to keep the majority of people ignorant and shallow; and the crowds, when "emancipated" from the harsh conditions of life, wouldn't automatically aspire to "high" culture and consciousness. Because in a society like Brave New World where ability, initiative, strong human emotions, and life itself have no meaning, and human beings lead an idle, purposeless life, what does "high" culture and consciousness signify? Huxley answers this question in his novel with a discussion about Shakespeare. Shakespeare produced much deeper and more sophisticated works of art than what is prevalent in Brave New World. Because in Shakespeare's time, the relationships among people were dense, life was an adventure with its hardships and dangers. It was necessary to struggle to achieve success and be satisfied. And what makes life meaningful and worth living is precisely this. Otherwise, if life was as it is in Brave New World, people would numb their consciousness instead of cultivating it—in the hope of forgetting this meaningless life.

Huxley puts savage reservations against Brave New World. Technologically advanced Brave New World society has spread to every part of the world that it is possible to exploit its resources economically; the only remaining areas that it hasn't subjugated are the savage reservations. The technological level of the human communities that live in savage reservations isn't advanced. People here are horticulturalists. There are no centralized, bureaucratic structures, and the external world isn't managed and regulated by large organizations. People have a more individualistic character. They don't belong to an enormous community but belong to themselves and their loved ones. People here are not the manufactured products of society, and they continue to reproduce naturally. Wild animals continue to live in these reservations freely. Savage reservations are the only remaining antithesis of the planned, regulated, secured, anti-septic, and controlled society of Brave New World. These are the places where Nature, outside the control of the technologically advanced human civilization, has its own will.

Therefore this region is an antithesis to the Brave New World, and the latter's evil character can be understood and revealed only by comparison to a place outside of its control. But Huxley doesn't romanticize this place; because what makes Brave New World a nightmarish dystopia is its seemingly "perfect" qualities, and savage reservation should be shown with all of its positive and negative aspects. Diseases, old age that can't be hidden by technological tricks, the necessity of physical effort, wars, struggles, etc. are the parts of the life of the savage reservation. Real freedom comes with a cost, and that is precisely what makes it possible.

The Present Techno-Industrial System

The modern industrial system was born when human societies started to use the energy of fossil fuels. Steam engines presented the power concentrated in coal to human societies, and the internal combustion engines have done the same thing for the oil. The enormous amount of energy concentrated in fossil fuels created an explosion in human societies and increased the production, communication, and transportation capacities exponentially. First railways, and after that motorways, made it possible for the industrial system to reach ever-wider areas. The utilization of engines working with fossil energy in the factories made possible industrial mass production. Enormous machines working with the power of oil have made it possible to excavate vast quantities of minerals and process them in quantities that weren't possible before. Railways, trucks, large container ships, gigantic machines used in construction and production have changed the face of the earth and societies. The industrial system started to spread rapidly by subjugating and replacing wild Nature. The technoindustrial system established itself entirely on a global scale during the second half of the 20^{th} century; and thanks to the advanced communication and transportation technologies, it has become an integrated whole spanning the entire planet despite containing different communities with different political, institutional, and cultural backgrounds.

This highly complex and worldwide social system forces people to live in ways and environments that they are not evolutionarily adapted to. The techno-industrial system is a social order with an enormous population, in which urbanization and specialization have gone to extreme levels. It needs an iron discipline and an advanced collective organization to function. People need to carry out the tasks (jobs) which are shaped for the needs of this rigid organizational framework and behave accordingly. But these tasks aren't satisfactory for the great majority; they reduce people to pawns without initiative, simple cogs in a giant machine. Constant growth and technological development inherent to the techno-industrial system create a world in which times pass quickly, and space shrinks rapidly. This creates in people an emotional state of uncertainty, insecurity, and anxiety. The collective character of the system destroys the small-scale communities. Homo sapiens are adapted evolutionarily to live in and identify with these kinds of communities. The destruction of small-scale communities produces the paradoxical isolation of the modern individual. Rapid destruction of the natural ecosystems and replacement of these with artificial settings trap people in synthetic environments to which they aren't evolutionarily adapted. Therefore, the living conditions that the techno-industrial system creates aren't the ones that people will accept naturally. The system needs to convince and enforce them with various techniques (propaganda, motivations like material wealth and status, techniques of surveillance and physical enforcement, etc.) to make them behave according to its requirements.

The methods Brave New World uses to shape human behavior start with the production of people according to the roles and place they will occupy in society. The present

techno-industrial system doesn't intervene (yet?) directly to the human genome because the information regarding the biological factors shaping human behavior is limited today. The consequences of this kind of direct intervention would be quite different than what was intended and might create more problems than benefits for the system. For this reason, the techno-industrial system, instead of direct biological intervention, uses some other methods to alleviate the dissatisfaction of people and control their behavior. These intervention methods consist of two main layers. The methods that are in the first layer and target people en masse at large[9] are quite similar to the ones in Brave New World: Electronic entertainment (internet, music, TV serials, movies, pornography, etc.), hedonist pleasures (commodity consumption; tourism sector with its restaurants, all-inclusive hotels; etc.), hobbies, pseudo-satisfaction of the need of belonging to a reference group by surrogate methods (football supporters' groups, social activism, political parties, etc.), absorption of the rebellious feelings or even rendering them beneficial to the system by the leftist ideology, and when all these are not sufficient, implementation of psychoactive drugs.

In the techno-industrial society, the first layer of control techniques (entertainment, distraction) is both possible and mandatory. It is possible because this social system can sustain physically its enormous population by only using a minute fraction of its energy and material resources. After satisfying the most basic physical necessities of its members, it can still allocate resources to the control techniques that are in the first layer. But these "entertainment" functions of the system should not be seen as redundant expenditures that could be diverted to more "necessary" or "useful" outlets. They have their "rightful" place in the huge social machinery and they are as essential for its functioning as the other indispensable sectors like manufacturing and agriculture. With the advancements in food production technologies (agricultural machines, artificial fertilizers, pesticides, etc.) it became both possible and mandatory to construct a huge manufacturing sector beside and on top of the agricultural sector. With the advancements in manufacturing technologies (moving assembly lines, computer-controlled automation, etc.) it became both possible and mandatory to construct a service sector beside and on top of the manufacturing sector. But the different sectors of the techno-industrial system are not superficial and redundant additions to more useful and necessary functions. Each technological advancement in a particular sector makes other advancements in other sectors necessary for its functioning. In order to feed billions of people, industrial agricultural techniques are essential. For industrial agriculture, tractors, combine harvesters, artificial fertilizers, pesticides, etc. are necessary. Agricultural machines need oil to work, the oil needs to be produced with complex extraction and refinement procedures. These machines and their spare parts can only be produced in huge manufacturing plants on a mass scale. Artificial fer-

[9] With the developments of computer technology (like machine learning algorithms and ever more powerful processors), the system also has started to target people individually with its methods of enchantment. Contents that are shaped for specific individuals in shopping websites, video streaming websites, etc. are becoming the norm.

tilizers and pesticides can only be produced in chemical plants. All these industrial manufacturing activities require control, supervision, human resources and financial management, judicial representation, public relations, advertisement, etc. These are done by engineers, accountants, finance and human resource specialists, lawyers, advertisers, etc. The service and manufacturing activities of the techno-industrial system amass people in big cities. Motor vehicles are necessary to commute these people to their work and bring food from the rural areas to the cities. This creates the necessity of automobiles, trucks, trains, etc. This enormous transportation network, to function, needs controls, regulations, certificates, rules, etc. In order to construct and sustain the infrastructures (roads, bridges, energy networks, communication networks, etc.) necessary for all these activities, taxes should be collected and spent properly. State structures, with their bureaucracies and institutions, are necessary to implement and supervise all these investments.

Therefore, the techno-industrial system is a giant machine with all of its constituent parts connected and they need one another to function. People need to fit in a rigidly defined slot in this giant machine. The slot they fit in requires them to follow strict regulations, workplace rules, stringent schedules; these force them to do their jobs in ways that are designed according to the needs of the social machine. This situation reduces people to mere pawns without initiative. They are not in a position to define their own goals, and pursuit these goals with their own autonomy and capabilities. And the tasks they do are completely severed from the necessities (like food and security) that are most important for them. They are highly specialized tasks bordering on absurdity without any relation to the practical necessities of life. This lack of initiative, lack of autonomy, the inability to use one's own capabilities to satisfy the most important practical necessities is disrupting a vital biological need called the power process.[10] The disruption of the power process creates feelings of boredom, meaninglessness, and psychological problems like depression, anxiety, guilt feelings, eating and sleeping disorders, etc. These problems make people less effective in the roles they assume in the social machine and even induce them to anti-social behaviours that affect negatively the efficient functioning of the system. The first layer of control techniques (entertainment, distraction) of the techno-industrial society is necessary to alleviate these psychological distresses and keep people functioning by drowning their negative emotions under a ceaseless barrage of sound and images. For this reason, those control techniques are useful for the system to limit the prevalence of these behaviors that would be greatly inimical for its functioning. Of course, these mechanisms of diversion can't bring complete satisfaction to people's lives and can't eliminate all the damaging behaviors. Psychological problems like anxiety, stress, boredom, emptiness, meaninglessness, depression continue to afflict individuals.

[10] For the definition and a more detailed discussion of the power process, see: Theodore John Kaczynski, Industrial Society and Its Future, paragraphs 33–37.

The society of 1984 crudely controls human behavior by demonstrating its physical force in every moment, and it doesn't drown dissatisfaction under the "entertainment" as Brave New World and the present techno-industrial system do. Because as we have seen previously, Orwell thought that material affluence and resulting free time (being free from the labor of basic physical necessities) would bring the elimination of the hierarchies and the realization of "freedom." Orwell's 1984, in order to preserve the hierarchical structure of the society, controls people with direct physical coercion, and doesn't use the diversion techniques that are in the first layer in our classification. The modern techno-industrial system combines the Orwellian (physical coercion, technological surveillance, crude propaganda) and the Huxleyan (distraction through entertainment and physical pleasures) controlling techniques. Because under the first layer of control techniques that we have mentioned above, there is a second layer of control techniques consisting of physical coercion methods that are even more efficient and more ubiquitous than Orwell imagined. It might be that an "ordinary" member of the techno-industrial society doesn't face this physical force directly in his daily life. But every member of the system feels this omnipresent physical force and surveillance capacity at every moment of his existence. The modern individual is surrounded first by a wall of distraction, constant stimulation, and brainwashing techniques. If these are not sufficient to channel his behavior to desired limits, then there are more concrete methods to incapacitate him.

Technological development consolidated the monopoly of physical violence at the hands of the centralized governments and created the enormous surveillance, control, and physical coercion capabilities of the modern states. Smaller political entities (feudal principalities, chiefdoms, or any other small-scale groups that the central organization of the society couldn't control) dissolved in bigger centralized political structures and individuals remained alone and isolated face to face with the Leviathans that monopolized the violence nearly completely. This process was nearly consummated at the end of the 19th century in terms of hegemony over lands when the centralized state organizations instituted their control over most of the surface of the World. In the continents like North and South America, Australia, and Africa where there were very limited or no central state authorities until that time, industrial societies established their hegemony by the end of the 19th century. The places where their direct hegemony couldn't reach yet are climatically and geographically unsuitable remote places like the polar regions, deserts, rainforests, and remote parts of the oceans (like in the Brave New World). With the technological advances of the 20th century, the intensity of their domination on the areas that they control increased. Modern transportation technologies have given them the ability to intervene anywhere in the world very rapidly. Advances in communication technologies make it possible to screen and control virtually every aspect of the lives of their members, and the mass media tools like radio, television, and the internet make it possible to inculcate to the masses the necessary values and ideas.

The destruction of the small-scale communities by the centralizing power of technology created the modern individual's paradoxical isolation. Today, a great number of people live in giant metropolises surrounded by huge crowds, but in practical terms, they are alone and isolated. The only way for people to come together and make a meaningful and practically important activity is to make it through the channels of the social system. This means that to make something practical they should join a large collection in which their contributions would have only a minuscule meaning and assume the roles that had been already defined by the system. Friendships they have outside of this working collective tend to be only for the entertainment purposes with which they pass time. So, they feel alone, isolated, and powerless.

Nearly all the moments of the life of the modern individual are monitored and recorded. Surveillance cameras are practically everywhere; his financial status, the things he buys, his assets, education, abilities, capabilities, etc. are all in the databases of the system. The information the system has on its members is increasing even further with the advances of computer technology. People have started to voluntarily present who constitutes their social circle, what they do in their daily lives, where they go with whom, what they buy, what they watch and listen to the system. Thanks to new computer technologies like machine learning algorithms, it is possible to evaluate all these vast data in order to lay bare people's desires and fears, i.e. their whole character. Thus, the system's physical coercion and brainwashing techniques have increased to a level at least as high as 1984, if not more.

A common feature that we see both in 1984 and Brave New World is that new generations are socialized from a very young age directly by the social collective. Childhood is the period when people can be socialized (inculcation of the values, ideas, and behaviors that society deems as appropriate to its members) more effectively and successfully. For this reason, in both novels, raising children from a very early age under the control of the system is very important for implanting the desired values and ideas to people. Current techno-industrial society, consciously or unconsciously, is demonstrating a similar tendency in socializing children. The destruction of subsistence home economies by the Industrial Revolution and the mass exodus from villages to cities resulted in the shattering of large family structures and reduced the family relations to the level of the nuclear family. The accelerated and more intense integration of women into the techno-industrial society since the middle of the 20^{th} century resulted in the loosening of the nuclear family ties and submitted children from a very young age to the institutions of the system (private or public kindergartens, and the other higher level educational institutions). Apart from these institutions, the other factor which is very important in shaping the world-views, ideas, and values of the new generations is mass communications media (nowadays especially the internet). Therefore, family or the close circle of people around it has virtually no impact now determining the ideas and values of children. The indoctrination process of the technoindustrial society is reminiscent of the hypnopaedia of Brave New World. Individuals who have been bom-

barded from birth by the system's values from various channels start to internalize them unconsciously.[11]

The present techno-industrial system's attitude towards sexuality is similar to Brave New World's. Especially after the advances in contraception techniques in the sixties, traditional conservative attitudes regarding sexuality mostly have died, and the connection between sexuality and reproduction has been partly severed. This has weakened the nuclear family relations in addition to the extended family ties that had already been mostly severed. As a result, sexuality was partially released from the responsibility of child-rearing; and it became possible to engage in sex, without the fear of consequences, solely for pleasure and fun. Thus, sexuality joined to other hedonistic pleasures (consumption, holidays, products of the culture industry, etc.) which are being used to relieve the discontents that the system's pressures create on people.

In 1984, the party forces people to have telescreens in their houses primarily for listening and watching them, secondarily for propaganda reasons. In the real world, people have put televisions in their houses on their own. Of course, in the real world, the system doesn't use television to listen and watch people. It functions mainly as a propaganda tool. But this propaganda, at least in western countries, isn't as obvious, blunt, and dull as in 1984. The principal function of the television in techno-industrial society is to fill the void and the meaninglessness that the modern lifestyle leaves behind. The system makes electronic entertainment a necessity for its members by the lifestyle it implies. Remaining alone by himself and his thoughts in tranquility is a traumatic experience for the modern individual. For this reason, he tries to drown his thoughts under electronic stimuli by staying in an artificial universe isolated from reality. He tries to forget the purposelessness and futility of his existence for a time under the bombardment of the sound and spectacle of electronic entertainment; he tries to feel alive by watching movies, serials, and other television programs. Because of this, propaganda can penetrate deeper into his psyche and be much more efficient since it functions via a powerful and intense urge. Since the modern individual passes most of his time under a constant bombardment of intense stimuli that keeps his brain continually occupied, his worldview, ideas, and values are shaped -for the most partinside the periphery of the ideology of the techno-industrial system. Because the electronic media (both in its fiction and news forms) propagates, explicitly or implicitly, the opinions and values of the techno-industrial system—apart from some shallow daily political differences.

Advances in computer technology considerably ameliorated electronic entertainment and manipulation techniques. With the exponential increase in the capacity of the processors and the speed of the internet connections, image and sound broadcast

[11] Some of them internalize these values so intensely that when they try to rebel against the established order they can't think of anything else and use the system's values to rebel against it. For a more detailed discussion of this subject, see Karagam,"Leftism, Techno-Industrial System, and Wild Nature"and Ultimo Reducto,"Leftism: The function of pseudo-critique and pseudo-revolution in techno-industrial society".

became mobile (smartphones) and started to invade every nook and cranny of the people's lives that were impossible to reach before. Internet media makes it possible to create addictive states intentionally on people: Web page and application designs that are deliberately designed to trigger the expectation of new surprises on people (dazzling icons, gripping notifications, etc.) and more importantly, inducement of a false feeling of belonging provided by the pseudo communities of the social media (thereby the system gives to the isolated modern individual a false feeling of belonging to an imaginary and unreal community.) These techniques create real physical addictive states in people by triggering the reward system of the brain. Thus, people are addicted to the entertainment and propaganda of the system with the literal meaning of that word.

As we have seen in this paper, the ruling classes in 1984 try to hold back intentionally material standards of life to preserve the hierarchical structure of the society. For this reason, the lower classes and the middle classes of 1984 live in terrible physical conditions. On the contrary, Brave New World is a society that has high material standards of living. Developments in the techno-industrial system have produced conditions that are, on average, more similar to Brave New World. And different nations inside the techno-industrial system take as their ideal a society similar to Brave New World: A society that exploits the "resources" of the planet and enslaves wild Nature to increase the standards of living (i.e.: individuals would have more to buy if they resign their autonomy to the system and live inside the boundaries drawn for them.)

In this context, we have witnessed since the end of the 19$^{\text{th}}$ century and the beginning of the 20$^{\text{th}}$ century that machine technology has decreased the need for physical labor, Fordist mass production has filled daily life with numerous commodities, motor vehicles have connected remote places by speeding up the transportation, living spaces have been increasingly artificialized by concrete structures, and people are increasingly incarcerated in a virtual world (this is called communication) with the advances of the electronic and computer technology. The present techno-industrial system utilizes these developments to keep its members (whom it forces to live in conditions that they are not evolutionarily adapted and whom it still needs as laborers and consumers) functional.

But of course, this parasitic and hedonist lifestyle that the techno-industrial system offers is only possible by the relentless exploitation of the Earth's resources. To sustain this lifestyle, enormous amounts of material and energy are necessary, and what the system does to procure these is disrupting the functions of the biosphere that sustains life on Earth. The consumption of a considerable amount of fossil fuels in such a short amount of time on geological terms has changed the chemistry of the atmosphere. This causes climate change and it is a disaster for wild Nature. Procuring minerals that are necessary to produce the commodities of the technologically advanced consumer society is poisoning the land and the water. Plastics, essential components for many of the products of the techno-industrial system, have penetrated every nook and cranny of the biosphere and are displacing the building blocks of life. To feed the population that

is increasing exponentially, millions of square kilometers of land have been transformed into agricultural lands. The destruction of millions of hectares of wild ecosystems to artificially produce plants is causing land erosion and depletion of the freshwater resources; and pesticides are destroying insect populations. Armed with the power of modern technology, the fishing industry is literally emptying wildlife in the oceans. The invading species, which are transported to different geographies through the supply chain of the global economy, are destroying wild ecosystems. With this relentless attack on wild Nature, the technological civilization is pressing on and disrupting the biospheric cycles, and it is possible that a global collapse of the biosphere's functions that sustain complex life on Earth eventually happens.[12]

The changes that the technological development has induced on the societies have proved Huxley to be more accurate than Orwell. It has been demonstrated that technological development, even if it is not misled by a totalitarian bureaucracy and creates material prosperity, is incompatible with real freedom and human dignity because of its internal dynamics. But it is not certain that the future social consequences of technological development (in terms of "material prosperity" or the institutional structures of societies) will be similar to what we have witnessed until now. The necessity of the system to restrain its activities that go beyond the boundaries of the biosphere may result in a restriction of the permissiveness it grants to its members in terms of consumption and entertainment. It may have to strictly ration the burden that its members bring on the biosphere and to do this, it should have to intervene in their lives in a much more authoritarian way. Moreover, the depletion of so far abundant energy, food, and material resources may create a deficiency in its ability to distract its members with entertainment and consumption. That could make necessary a more open *use of the stick that it* always keeps ready under its distraction techniques.

Apart from the reactions that the techno-industrial system's functions create in wild Nature, the advances in computer technologies can also produce deep changes in the relations between the system and human beings. The democratic structure (separation of powers, determination of the executive branch with universal suffrage, and constitutional rights like freedom of speech, right to a fair trial, etc.) and welfare practices (retirement, weekly and annual holidays, trade union rights, free health and education services, etc.) of the western societies became prevalent during the 19th and 20th centuries when human labor was at the center of the system's functions. It was crucial for the system to pay attention to the needs of the masses since it was dependent on

[12] The near-term collapse of the technological system isn't the greatest danger looming in the future. This disaster scenario that the literature of collapsology repeats frequently is in fact an optimistic scenario for wild Nature. The techno-industrial system will search for the solution to its current problems in the accelerated development of technology. New technologies might present new opportunities to the technological civilization to go even further beyond the biospheric limits. New solutions and energy and material resources that have not been considered or were unknown until now will come to the fore. However, the new resources offered by these new technologies will have to be extracted from the biosphere and will mean deeper and more intense disruption of the biosphere's activities.

their labor power. The great masses of working classes who undertake the system's functions were integrated into the system by democratic management techniques and welfare state practices. Two tendencies that are being produced by computer technologies (artificial intelligence and robotic technologies) might alter this relation between the technological system and human beings. First, computer technology is decreasing the need for human labor. A useful analogy for thinking on this tendency is Hans Moravec's "landscape of human competence:"

Computers are universal machines, their potential extends uniformly over a boundless expanse of tasks. Human potentials, on the other hand, are strong in areas long important for survival, but weak in things far removed. Imagine a "landscape of human competence," having lowlands with labels like "arithmetic" and "rote memorization," foothills like "theorem proving" and "chess-playing," and high mountain peaks labeled "locomotion," "hand-eye coordination" and "social interaction." Advancing computer performance is like water slowly flooding the landscape. A half-century ago it began to drown the lowlands, driving out human calculators and record clerks, but leaving most of us dry. Now the flood has reached the foothills, and our outposts there are contemplating retreat. We feel safe on our peaks, but, at the present rate, those too will be submerged within another half-century.[13]

Shedding of its need for human labor by the advancements of computer and robotic technologies might reduce the system's sensitivity towards the humans' needs and desires and might harden its attitude towards them. Management techniques (representative democracy, constitutional rights, etc.) and welfare state practices (retirement benefits, trade union rights, annual leaves, indemnities, etc.) might be transformed into a more authoritarian and ungenerous nature as human labor becomes more and more redundant. There are some signs in the United States indicating that this trend has started already[14]: since the middle of the 1970s, despite the continuous increase in labor productivity (which measures the value of workers' hourly output) the compensation (which includes wages and benefits) that labor force gets from this remains stagnant; since the mid-1970s, the fraction of national income going to labor (this includes anyone who draws a paycheck) instead of capital is decreasing; labor force participation is declining since its highest point in 2000 ("labor force participation rate rose sharply as women flooded in the workforce, but the percentage of men in the labor force has been in constant decline since 1950, falling from a high of about 86 percent to 70 percent as of 2013. The participation rate for women peaked at 60 percent in 2000; the overall labor force participation rate peaked at about 67 percent that same year"[15]); the US economy is losing its ability to create new jobs; income inequality is acceleratingly increasing; job market polarization is increasing (job market polarization is "the

[13] Hans Moravec, "When Will Computer Hardware Reach the Human Brain?" Journal of Evolution and Technology (1998), vol. 1.

[14] See "Seven Deadly Trends" in Martin Ford, Rise of the Robots: Technology and the Threat of a Jobless Future, Basic Books, 2015.

[15] Ibid.

propensity of the economy to wipe out solid middle-skill, middle-class jobs, and then to replace them with a combination of low-wage service jobs and high-skill, professional jobs that are generally unattainable for most of the work-force."[16])

Second, computer technology is increasing the system's ability to track people, manipulate them, and control their behavior. The system has the technical ability now to track people in their daily lives, register their shopping habits, their circle of friends, whether they obey the traffic rules, etc. on an individual basis, and computational ability to transform this vast amount of data into useful information. Facial recognition and big-data analysis technologies based on machine learning algorithms are being used to track individuals, discourage harmful behavior, and foster or enforce useful behavioral habits for the social collective. A concrete example of this trend is China's Social Credit System. With this system, individuals will be scored and categorized whether they behave according to the social norms, and will be socialized with this digital system of tracking and scoring apart from the traditional propaganda and police methods. Of course, it is not certain that this new ultra-technological method of socialization will be successful and will produce the expected results. Forcing people blatantly to certain behavior patterns might reduce their faith and commitment to the social system and diminish their motivations to voluntarily work for its benefit. Despite all of their totalitarian pretensions, socialist societies of the 20th century were less successful than the western capitalist societies in shaping the behaviors of their members and motivating them. But today's computer technology is bestowing to the claim of totalitarian control of every aspect of human life new arms, and opening to the system's control the last unreached corners of daily life. The ability to watch people individually virtually at every moment of their lives might prove to be a factor that makes it possible for the system to increase the pressure on people without giving permission in other areas (permission in consumption, permission in political and religious views, etc.) Therefore, the combination of these two tendencies of computer technologies with the problems of biospheric limits might induce the system to reduce both the bread and the circuses it offers to the masses, and it might evolve to a point more reminiscent of 1984.

Conclusion

Complex human societies, armed with the power of modern technology, produced an artificial system that forces people to live in conditions wholly different from the circumstances in which humans evolved. It is mandatory to adjust individuals with various methods to these unnatural conditions. In their novels, Huxley and Orwell speculate about in what manner these methods may evolve. Orwell, because he shared Enlightenment's and leftism's progressive ideology, believed that technological development could produce "beneficial" results. For him, the danger lay in the possibility

[16] Ibid.

that a bureaucratic class might deflect technological development to suppress its supposedly "emancipatory" possibilities and use it to create a totalitarian society. On the other hand, Huxley demonstrated with Brave New World the logical outcomes of these "beneficial" consequences. And they would be a complete disaster for human freedom, human dignity, and wild Nature.

The transformations that technological development has induced until now in daily life and on the structures of societies in general, have proved Huxley's predictions to be more accurate. And it is also true that, in its quests of controlling human behavior, the techno-industrial system combined the methods of 1984 and Brave New World. But this much is clear that, regardless of its form and the techniques it uses to dazzle, control, and tame human beings, a technologically advanced society will continue to subjugate/destroy wild Nature and destroy the possibilities of real human freedom. The solution is not to attain a specific form (democratic, liberal, socialist, sustainable, green, equal, etc.) of a technological society, but to get rid of it.

The Ted K Archive

A text dump on Karacam

<web.archive.org/web/20240527123415/https://vahsikaracam.blogspot.com/>

www.thetedkarchive.com