CYBERPOLITICS

Political philosophy of the future

Edited by Constantino Pereira Martins

IEF

In Memoriam Bernard Stiegler

Cyberpolitics

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Para o meu querido filho Guilherme, estrela do mundo.

Arde como um astro
para que a tua luz forte
jamais possa ser imitada por
nenhuma máquina.

Against the ugliness of the world.
My star, My protector

O fogo da curiosidade
Onde ardem
Os nossos desejos metafísicos
Mais profundos e inconfessáveis
Na forja da imaginação
Da arte ou na oficina da ciência
E das leis matemáticas do universo
Qualquer que seja o caso
Temos que arder para saber.

Against the ugliness of the world.
My star, My protector

Mas de que vale a frieza do génio
A sua perfeita geometria
A sua robusta engenharia
Sem o calor do riso e do amor?
Sem a música das ideias no pensamento?
Temos que arder para aprender
Arder para saber
Mas arder bem.
Para que não sejamos apenas particulares,
Mas únicos e irrepetíveis.

Against the ugliness of the world.
My star, My protector.

Arder pelo viver
Arder pelo amor
Amar a arder e saber
que qualquer conjugação terminará
a arder pelo fim do poema
que nunca chega.
O poema nunca está acabado.

Against the ugliness of the world,
the infinite poem.

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SECTION III

Dissemination

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Foremost, I would like to express my sincere gratitude to Professor Nuno Ferro. Words are weak to define the trust and freedom Professor Ferro has placed in me. But also the admiration I feel for his work and study. He is the most brilliant mind I have ever met and its been almost 30 years witnessing his intelligence as a musical storm and his discourse as an embrace. His passion for thinking is still today an inspiration for many of us and an impossible challenge to fit in his shoes. Without him and his continuing support none of this would have been possible.

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Last but not the least, Professor Mário Santiago de Carvalho, Director of IEF in Coimbra University, for the support and making possible that the book could exist in a open access form.

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FOREWORD

0. Humbleness.

The task we have set ourselves here is not a light one. We aim at connecting present and future, at drawing that invisible line between possibility and actuality. At trying to see among all the shadows and fog in a transition stage. That is no easy venture. And aside from all the odds, aside from all the unpredictable developments we are as yet unable to see right now, aside from testifying to the survival process of possibilities and witnessing which of our hypothesis will become real, aside from all that, there is an overallfeeling, almost a palpable sensation, that something is changing. Drastically, rapidly, and deeply. Last year, around this same date, I was at the Kyoto airport trying to kill time before returning to Lisbon in what was to be a very long flight. Whenever you spend a lot of time in the same exact place, a vast territory of experience awaits you before and after boredom befalls you. You are suddenly able to see how small the world is, all the different types of persons, you enter in a void regarding yourself, your body and mind are out of synch, you wander through multiple horizons of time and memory, you walk when you start feeling numb, you eat, you listen to music, you read, but the full weight of time eventually kicks in, and either you sleep or you stroll a bit observing your fellow travellers who find themselves there, imprisoned, like yourself. During one of these rambles, I decided to enter a bookshop. Browsing through all the covers and titles, whilst thinking how much writing and reading have become a hobby when it comes to killing time, designed for empty areas of life like traveling, I found a strange book with a great title by Yuval Noah Harari. As I read the index, I was shocked to recognize a lot of my ideas and thoughts. There it was, a world best seller, or so it was announced, that synthesized what had cost me so much work and time to study and develop. I left the bookshop in horror, disappointed at my own intellectual achievements. But then, suddenly a strange thing happened. Following that initial state of perplexity, I started to digress about coincidences, life, and how truly wonderful is the fact that ideas are common and free entities, that they belong to no one. Here I was at Kyoto, after having studied so much about Political Philosophy in Lisbon, face to face with a mirror in the words of a Professor sitting at a Jerusalem University. I was blown away. And even more blown away with a sudden, sharp and profound experience of humbleness. In fact, these two instances, humility and the possibility of thinking for oneself, allow both for the autonomy of Philosophy and for the dialogue between us and the ones that are no longer with us. We can reach the same conclusion as Kant or Kierkegaard, have meaningful visions with Nietzsche or Wittgenstein, feel alone or in context: such amplitude is very rare in the academic universe, especially in our present time. In the corridor of the Kyoto airport, I was humbly reminded by that book why I love philosophy: absolute freedom, something I never experienced in a scholarly atmosphere. It is that same freedom that brought us together in presenting this book to readers. And it's a very ambiguous book from the start: while it provides and intends to ground some key concepts and discussions, it is already fighting for its own theoretical survival in a world where the cyberpolitical

shock, along with its inevitable shift of paradigm, is going through several waves and stages of development. We are starting with something that a few years ago was a mere hypothesis and suspicion, but may easily be found to be obvious and irrelevant a few years from now. In very brief terms, then, I would suggest a twofold preliminary analysis:

a) *Dematerialization of the political process*. Taking metamorphosis as a central concept, alongside the notion of speed (addressing and improving the old politics always a step behind, that insists in the relationship with geopolitics as an essential analysis tool for preventing the establishment of Cyberpolitics as a new academic method that could also integrate and improve political analysis: the real world vs the virtual world);

b) *Immaterialization of the political universe*. Probably the last phase of this stage, which will imply the coexistence of parallel worlds, the surpassing and death of mass media systems, an almost utopian political world built in accordance with specific group or individual positions and interests.

These two landmarks, with all the controversy and discussion they might generate, even if it now seems tenuous and ambivalent, will reveal itself to be inevitable, and one could even say it is already in motion. When I started working in this research area, the mere word Cyberpolitics was fragile and uncertain. Since then, many changes have occured. From the immense doubts and insecurities observed in the past, numerous certainties have been reached in the establishment of the concept and field of studies. It is the importance of that conquest and those concepts, which are now in plain view, that this book wishes to address and to underline both for the present and, most especially, for the future.

1. Background: **cybercultural foundations**.

To mark Cyberpolitics as an operative concept of a double twist may help to clarify its state of crisis. The fact that the contemporary political space enters into a hyper-complexity domain is the result of multiple layers that we will try to show here with the aim of pointing out some of its components. At the same time, the notion of Cyberpolitics is an inheritance of Cyberculture understood as the convergence of culture and technology. Thus, contemporaneity is currently undergoing profound changes effected by these technologies, something which demands a rethinking of major philosophical categories. The clash between politics and *technics* implies that we confrount ourselves with a new virtual space. The space itself is torn by this multitude, by this junction between the virtual and the technological. Despite the enormous complexity involved in these notions, we will summarily address the non-neutrality of technics. Afterwards, facing the question of the Virtual in the field of Cyberculture implies enunciating the determinations that allow us to identify its various qualities: simulation, interaction, artificiality, immersion, telepresence. In fact, multiplicity is the internal movement of the concept of the Virtual. This could explain the panoply of

possible lines to be explored, and provide a more contemporary way to present the 20th century as a welcoming era of this debate in terms of technics, a complex network ranging from the Aesthetic to the Political. We could of course present different authors that would represent in global terms the transition we are trying to underline here. That, however, would most likely turn out to be impossible, due to the countless philosophical traditions and cultures such an approach would entail. Since from a personal perspective we would always have to revisit the fundamental works of Bernard Stiegler and Pierre Levy, we shall begin by identifying the scope of Cyberculture as the foundation of a new hybrid area that has its privileged place in network culture. Although immateriality may become a confusing reflection to take as the object of analysis, it is Cyberculture's inherent plasticity that makes it such a domain of universal effects. If the problem of our time is the advent of technic, or an ecothecnic of the bodies *techné* movement, then we should consider the political implications that arise from the convergence of *technics* and *bios*. This implies the displaying of network problems associated with Cyberculture, from the notion of Body to the problem of Space, taking as a central question the reversibility of the Virtual according to the Moebius effect. A *hyperbody* , a *hyperspace,* a new *technosocial machine*.

Our problem can actually be circumscribed to a rhizomatic synthesis of the cyberspace. The Internet is the heart of the cybercultural machine as a replacement, analogy, assimilation and articulation space. In the context of this complexity, this "*otherwise*", we see that Cyberculture, as one of the contemporary movers, will probably become the center of the 21st Century.

This constitutive nomadism of one's own network strengthens our intuition regarding the constitution of the primary category of "being-in-between", which can be translated by Hybridity, a natural condition for the fixation and stabilization of concepts and categories. This is a nomadic and hybrid movement that unfolds in an expansion of spaces within a multiplicity with no unity, no referential center. An aesthetics of fragments, a spectral reassemblage, re-combinatorial multimedia platforms, in this no man's land where resources are vast in its hybrid ubiquity, Cyberculture leads to a new political ontology. Thus, virtualization is not a derealization, but a mutation of identity, a shift of the ontological center of gravity of the object: rather than being defined mainly for its *actuality*, virtualization finds its essential consistency in a problematic *body*.

What the Virtual allows is the passage to another kind of logic: a logic of multiplicity and difference, of the unfinished and dispersed. The idea of an ocean that contains the idea of univocity, the expression of the same sense according to the differences. A single ocean for all drops.

From Cyberculture to Cyberpolitics, we will present a line, a comparative and evolutionary framework that departs from the initial assumptions of the political as a binary, hierarchical, stable process (predictability), onto a diffuse rhizomatic tone, based on assumptions of velocity, instability and unpredictability.

Thus, in the post-panoptic, or in the reversal of the panoptic, the pathos of the logos is

displayed, and time determines the categories of body and space. In this sense, *Cyberpolitics is the new paradigm that revisits the political according to the new technologies, with a particular focus on the advent of the internet and its effects. In accordance with this definition, it is easily understood that communication becomes a key notion. If the general categories of quality and quantity are diluted, it's in relation and modality that we can find the structuring axis of Cyberpolitics.*

The central role played by mediation and representation in reflecting problems of contemporary political philosophy indicates that we are in the presence of a real bundle of overlapping problems. Synthetically, and in general terms:

a) the problem of public space. Between explosion and implosion, a system of maximum visibility, where potentially all connections are displayed, exposing the danger of disconnection;

b) the problem of the perplexities (*aporia*) and latent paradoxes. Between globalization and anti-globalization, the crisis of the relationship between democracy and capitalism, between politics and economy;

c) the problem of affections and emotions as a central area. Between pessimism, optimism and cynicism;

d) the problem of potentiality (potency);

e) the problem of limit. In the spirit of the meta-federal consideration already suggested by Kant, the new realities bring the possibility of facing the ultimate challenges: world federation and direct democracy (on different levels).

It would seem that the central problem of Cyberpolitics is built at the confluence of the problem of public space and power, in the sense that the movement of explosion and implosion occurs under the general assumption of expansion.

The conceptual connection of Cyberpolitics with the public space indicates essentially its more important definition: the crisis of the public space. The attempt to circumscribe Cyberpolitics as a problematic and complex territory can then be simplified beyond the previously analysed crisis implications- as a domain of crisis, not of representation, but of mediation crisis.

The decompensation brought by the problem of velocity, the decompensation between political temporality and the immediacy of contemporary technologies, makes political visibility a hostage to technological forms of mediation. In its essential instability, this paradoxical nature of public space defines it as abstract and delocalized. This fragmentation of public space reveals the failure of control over temporality, showing the impossibility of representation as a stabilizer of contemporary experience.

This view summons up two essential interpretative movements of the public space, two trends of contemporary thought regarding Cyberpolitics:

a) a trend that interprets the problem of Cyberpolitics as impotence, that is, the construction of a critique of politics as a delayed construction process, and of postponement in general.

The impotence of politics in dealing with the fragmentary and disaggregating movement of the present, an invisible manipulation;

b) a trend that interprets the problem of Cyberpolitics as (potentiality) potency, i.e., as an opportunity for construction and resistance to the present, a possibility of building a new political space, identifying new horizons of possibility.

Thus, these two fundamental trends show a transformation process, as two different attempts at understanding the political phenomenon, a reflection of the profound change we are facing, a comprehension of the transition, of the historical-political becoming for which we must provide the appropriate reading keys.

In the theological-political contemporary immanent substrate, in its electrified metaphysics, we must face the problem of the eternal recurrence. How can we think the new? Does Cyberpolitics in its promise to set up a second nature only redirects itself to a circular logic of appearances? What are the real possibilities of a substantial change? Or are we just witnessing a change of *medium* that confuses freedom and alienation, a new willingness to submit, rooted in the need for distraction? In fact, technic and new media are undoubtedly the central characters in this political conceptual beginning of the 21st century. Under the precepts of the present federal paradigm, we have an indication for the possible future expansion of the concept of Cyberpolitics, as well as its applicability, meeting the multiple ongoing investigations which correspond to sub-determinations and conceptualizations around the binomials of citizenship/participation, vote/election, demonstrations/organization, management/bureaucratization, or to a localized phenomenon of implication and degrees of political impact. This strong expression of the cyberpolitical shock, in the form of multiple perspectives and analysis tools, will certainly cause a reassessment of all legal and political structures building, as well as the general figures and consequences brought about by a new form of sociability.

2. Diagnosis: (r)evolution, reshaping, possibilities.

The task of tracing the new frontiers of the political implies a critical effort that faces a double difficulty: first and foremost, the confrontation between contemporary political theory and the virtual speed of the present that results in a complex delimitation and circumscription of a new hermeneutic horizon of the public space; a second obstacle follows, concerning the construction of the concept of Cyberpolitics itself that, by its paradigmatic nature, involves a transformation and metamorphosis which we will also try to map. This effort will require a genealogical investigation into the concept of Cyberpolitics which derives from Cyberculture studies, but also the mapping of its different levels and fields of significance. This work-in-progress notion, at the crossroads of politics and aesthetics, will challenge different perspectives. While permitting us to address the changes in the political in terms of its technological implications in reshaping the public space, the analysis of the construction of the concept of Cyberpolitics will also allow us to underline the notion of crisis as an operating concept. The current political and economic

problems of the western world seem to indicate a possible cyberpolitical shock. The clash is probably due to the possible paradigm shift that is under way. History teaches us that our fundamental confrontation is with the unimaginable, in the same way that the political organization of the present time would be unthinkable for the man of the Middle Ages. Consequently, the foundation of political imagination is freedom. Are we ready to imagine the consequences of the installation of the cyberpolitical paradigm? Will Cyberpolitics, in its promise to install a second nature, constitute a substantial change? Is it a second nature towards a new political anthropology? Or are we just witnessing a change of medium that is able to blur the border between freedom and alienation? In fact, technology and new media are the central conceptual characters in the political beginning of the 21st century. Cyberpolitics is the concept that can help us understand this paradigmatic change in the present that will certainly imply a review of all the categories of the legal and political edifice building. Regardless of the type of hypothesis that one is constructing, regarding the attempt at a clear reading of the political in the present and near future, all the data and academic analysis consequently demand the complex mapping of what we know so far and also of that which we are sensing. In this way, different areas of research will be systematically presented within a coherent establishment of a cyberpolitical horizon where we can acknowledge its fundamental implications, dilemmas and new challenges. In very brief terms, this could be achieved in three main arenas:

A) Political economy.

The pressure of velocity has become an evidence for everyone, confirming the Stiegleranian equation *time X desire = attention*. This means that there is an absolute war against and for time. We are now witnessing an economic process which borders on a social engineering that is active within the heart of the paradigm of Cyberpolitics: the transition from real to virtual, from office to home, and from production and labor to precariousness and stock cash flows.

Maybe it's not a really new world, maybe it was always like this, a process of domination. Maybe the cyberpolitical and cybereconomical process of automation are akin to a social domestication process, confirming the worst hypothesis of Foucault and Deleuze. Maybe we weren't prepared to see factories working on their own, or even dream of the robotization of society and its implications on work, taxes, free time, jobs. But we did know that it wouldn't be easy or painless. How many crises have we been involved in since the beginning of the new millennium? Cybereconomics, far from being my field of study, is probably one of the biggest and most visible battlegrounds of our time: bitcoin, blockchain, the robot automation economic revolution, big data, the resurgence resurgent of monopoly as practiced by some companies, the conflict between the role of consumer and citizen, and the list goes on. And again, maybe that was has always been at stake in this endless repetition of greed, hunger for power and domination. After all, what is the novelty of all this? The immensity, and gigantism, of the dialectics between complexity and simplicity. It's simply overwhelming. It's a civilization transition scale.

B) Politics.

At the heart of the problem, addressing the difficulty in stabilizing dynamic processes, and remembering and honoring Kuhn's brilliant theory regarding not only science, but also the political domain, we could divide our or inquiry into:

b.1) *Reassessing political forms. Reassesing Cyberpolitics.*

Given the vastness and complexity of the subject-matter, and given that velocity and hybridity are the main guiding principles of our political and social reality, it would be safe to say that the great novelty of this massive phenomenon, from decentralization to the rhizomatic absence of a center, is the advent of the internet, which nowadays feels entirely natural. We can therefore reach the plain conclusion that the internet is the main origin of radical change in the last 30 years. The only truly odd fact regarding this event is related to the bizarre realization that the internet is the first anarchic achievement of our time. Reassessing Cyberpolitics in this particular light equals understanding how the anarchic potency of the internet founds its bizarre condition as an irony of destiny: it begins as a military application, gains a democratic existence shielded by the principle of transparency and access to information and knowledge, and is essentially anarchic in its nature, based on a desired total freedom. In other words, the internet as a whole, as a quasi-autonomous entity, could also be reviewed under the scope of anarchic political theory, from its definition to its historical development, even in what concerns communism, caught in the eternal dilemma between utopia and realization or pragmatism. This nuclear dilemma, developed into the philosophical debate between freedoms and the unleashed use of freedom as debauchery, brings us today to the speculative debate around the planetary foundation of a human right to deep and absolute egoism. The return to a primitive selfishness, a sort of solipsism in the midst of a paradoxical tribal uprising. It remains to be seen, however, whether a technological society can sustain itself in primary selfishness and generalizedvanity. And we would not even be prepared to contemplate the ingredients of envy and jealousy implied in these categories. It seems that there is a micro and individualistic movement on the rise, a sort of hedonism based on an electronic anarchy, which brings to the surface an aporia between solipsism and causing the system to blow up from the inside (thereby implementing another system) or even reconnecting to the anarchic beginnings of Cyberculture and cypherpunks, or more recently through crypto-anarchism.

b.1.2) *Understanding the internet in four building phases*:
b.1.2.1) *Revolution*. The introduction of personal computers and the massive use of the Internet;
b.1.2.2) *Expansion*. The use of the internet as a common product, not only meant for knowledge of business, the idea of an innocuous and neutral phenomenon;
b.1.2.3) *Explosion*. The building of monopolies, the social use of the internet and application of the network theory, the underground movements, the final fight regarding search

engines, the passage from geopolitics to cyber wars, the dialectics of conflict and resistance; b.1.2.4) *Fourth wave*: In the present and in the near future, the focus on political economy of the web, but at the same time a disruption, or even an implosion as we know it. The "second life" idea will gain ground, and there will be a shift in the use of the internet, perhaps a sort of internalization, as we are now witnessing with the internet of things or the promise of quantic computing. Regardless of the shape it will take, the principle of fusion will always be applied. There will, most probably, be a restoration of the Kantian idea of *sensus communis*, restoring the idea of community in all its amplitude. Foucault and Rabinow saw this a long time ago.

b.2) *Affective Capitalism or a Politics of Affection?*

To comprehend the major changes that our time is experiencing, a major cyberpolitical equation is being build: *time X action = emotion*. The introduction of new political key elements such as cyber wars, cyber-attacks, soft war and psyops, big data analysis, has enormous implications in the perception and action of the key political players and strategy, as well as a paradoxical outcome in a cold form of algorithmic-statistical policy of government. This points to a delusion of the attempt to build a political science in the same manner that behaviorists have tried to scientifically explain the human mind. Our time is being dominated by passions or emotions, and the rule of affect can only be understood against a background of social micro fragmentation, as Arendt saw so perfectly, but also in a new form of existence based on loneliness and nomadism (digital or not). In this manner, we could have a Pinocchio backlash regarding the island of pleasures, a sort of game of illusions based on politics as entertainment, a merry-go-round game of perception and affection. Behind the curtain of neutrality and placebo, a ruthless and brutal world of savage profit emerges, dancing on the tomb of common good. Let's hope that E-Democracy an open Government brings transparency, that Megapolis will bring brighter and happy lives in the overlapping and merging analogic and virtual realms, that the political imagination isn't trapped by cyber surveillance of Mankind's old aspirations, dreams and freedom. A new era is upon us, and the resurgence of new forms of empire is in plain sight.

b.3) *The beginning of a new Eco-politics*. Finally, one of the most important topics that will be essential in the political agenda, i.e., the ecological paradigm. Given the long-term nature of the process of self-awareness regarding the planet and its foundational characteristic of scarcity, which includes taking health care and the environment as common goods seriously as belonging to humanity, we must depart from the most obvious of the premises: global problems demand global solutions. And, like the internet, the interconnectivity of the planet is a simple and clear fact. If we revisit the near past and consider the present time, we are confronted with the problem of air and pollution almost everywhere in developed societies. The main argument of well-being and health is under attack by the energetic

crisis that covers up the great disaster on the horizon: the shortage of drinking water. The imminent lack of potable water, the absolute disregard for the rivers, will bring forth the problem of water problem as for the focus of global conflicts in a very near future. Thus, this part of the cyberpolitical paradigm in fact amounts to a disconcerting evidence: back to the basics, i.e., water, air, land, food, shelter. It's a strange mixture of an ethical disorder and a cognitive dissonance that maintains the world of politics in a state of belief, hoping for the best. It should be noted that in a hyper-technological world we are at the same time grappling with crises and pronouncements so basic to human survival. This discrepancy is extraordinary with regard to our perplexity of analysis and must be underlined because it brings us dangerously close to some of the announced conspiracy theories and dystopias that nearly everyone shares in secrecy. A serious and true political ecology that doesn't negotiate or bargain for the validity of our common future, as Hans Jonas so clearly demonstrated, implies by natural deduction the only sane conclusion: the beginning of a new eco-politics, or the end of our natural world as we know it. The radical challenge that lies ahead, at the brink of catastrophe, is no more no less than the act of demanding wisdom in creating of an elegant solution for this survival dilemma.

In conclusion: it is probably impossible to grasp the infinite recombinations of all the elements involved and their mutual influence on each other. But we can be sure of one thing: no matter what form will emerge from these boiling infinite reconfigurations of power, all of the main contenders share a common characteristic: the large scale ambition, fueled by a fusion principle, and like *Kronos* who ate his own children, it will be for sure at a global dimension. global baseline.

C) Technology.

Probably the most obvious engine of transformation, and the center of culture and upcoming civilization, that involves the reshaping, and refoundation, of politics and will certainly have *fusion* as a central principle in the development of the political-technological process. Fusion signifies here a multitude of layers of meaning regarding simultaneously facing different levels of phenomena between political culture and technology. Fusion of the hyper connectivity of the internet, sociality, robotization and artificial intelligence as main vectors of a very large and complex equation. Therefore, given the impossibility of mapping all the silhouettes of the network concepts, let's just mention fusion as a main paradigm. This means in extremis also fusion between humanity and machines. Of course all of this must be approchaed with great caution and prudence, since we don't have any clear idea of how the process of singularity will occur and develop. Of course that a Philosophy and an Ethics of technology will be needed to mediate and reflect on the relation between robots and humans in the extraordinary challenges it poses to citizenship and political economy. In general terms, both Science and Technics will determine our near future, but at this point it is really impossible to grasp a bioethical horizon of human / post-human, cyborg/ post-cyborg, more or less apocalyptic. I would like to finish this topic expressing my deepest eagerness towards the outcome of the most problematic fusion of

all, namely the one between technology and theology. I believe that event will be the most dramatic change in the history of mankind.

3. Prognosis: time, affect, economy.

One of the most fascinating things in the world are the periods of crisis. With all the pain and suffering they entail, but also the overcoming surprise and discoveries they always reveal. We could probably simplify all human evolution by considering its crisis as a profound pattern. However, regardless of the form it takes, an acute crisis is a singular historical moment of great intensity and anxiety, precisely in view of the fact that such moments demand more critical thinking. Maybe crisis and critic should be the subtitle of this final preamble, since we are clearly dazzled by the absolute crisis and change that the transition from the 20th century to the new millennium has brought upon us. It appears that this massive transformation is immune to critical analysis, and that it has occurred with a strange naturalness and a technological neutrality or passiveness. Science installed itself as the great new god without opposition, and established its imperial dominion without any major wars, no hordes of barbaric invasions, and paradoxically without any alarm. The future and its risks seem oblivious to the elapsing of time that peacefully observes and watches its own destiny unfolding like a movie spectator. As we all know, science fiction movies seem to be just two steps ahead of reality, and one of the biggest dangers of Cyberpolitics, regarding the temptation of total control, even towards accident and randomness, consists of witnessing the artificial intelligence, genetic manipulation, and parallel questions, in a degree of predictability never before encountered. But not even all the folds of cyberspace can hide the dimension of the problems that lie ahead (we should probably have to follow Kant's categories and mention also cybertime and the distortions, expansions and retractions, of time on the net). And time was, is and will always be, the central question of life. The net, the web, and all the expressions that sew our lives, desires, hopes, dreams and nightmares, also enforce the return of the same old dilemmas: trust, truth, freedom, safety, loneliness, sex, love and all the major philosophical questions that endure through the ages. The future and its risks should also be about the risk of oblivion, the fact that the electrical metaphysics that has been carried out so far, should not make us forget the basis of life, water, air, and face ecology as a fundamental ethics. The current Coronavirus pandemic seems to confirm that we have entered a second stage of Cyberpolitics. The urgent need for a deeper development towards health issues merging robotics and A.I., the emergence of a faceless society like a Levinas nightmare, it's like we almost feel we cannot maintain the *status quo* by its own, meaning humanity on its own, by itself. The automation of the social and labor fabric will probably be our next step in the chain of this new era. But besides all this speculative ultimate attempt of peeking into the future, and beyond any functionalist, metaphysical or pragmatist point of view, it's now visible for everyone that we are in an moment of enormous civilizational leap, that, much like the Hegelian process of self-consciousness, Cyberpolitics is the affirmation of that transitional stage. The impact of a paradigm shift is always fertile ground for the

savagery of our imagination, and *YouTube,* in the erosion between private and public sphere, will certainly be a tremendous archive for academic research: conspiracy theories, political-science fictions like exopolitics, world government, the exploration of space and human colonies, other civilizations and the Kardashev scale, and the entire unknown and uncertainty we are entering. And there are no risks without courage, fear and hope. Let's hope we live up to the challenges we are facing, in the certainty that life can be understood backwards, but can only be lived forward.

Ericeira, October of 2020

Non erit vobis in Deum non erit vobis in gratia Dei

Section 1

Immersion

Edited by Constantino Pereira Martins

1. *From cyberculture to networked emotions*

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Abstract

An archaeology of computer-mediated communication has to identify the period of popularization of the Internet, in the last decade of the last century, as a crucial moment in the formation of a cyber-political ideology that has guided many of the practices and discourses associated with digital networks. We will review this type of discourse, showing how it became even more widespread when we began to understand that the new digital media are networks in the precise sense of that term. The theory of networks allows us to see how imitation has become increasingly present in the new media, particularly in the most recent social networks such as YouTube, Facebook or Instagram. We will analyse several mechanisms of propagation of imitation, giving particular relevance to the way in which emotions, namely negative emotions such as anger or fear, spread and become dominant in networks. We show empirical data that support that kind of analysis, but we will mainly stress the role that algorithms such as those by Facebook and YouTube play in emotional contagion. This will allow to revaluate the ideas that accompanied the initial phases of the development of the Internet, as well as the dilemmas that the regulation of this network currently faces.

0. Introduction

In a popular book initially published in 1950, called *The Human Use of Human Beings – Cybernetics and Society* (Wiener, 1989), Norbert Wiener, one of the founders of cybernetics, presented a set of ideas that would prove to be important in the creation and development of computer networks. These ideas express an ideology of communication that has its foundation in what was then called symbolic information processing machines, that is, computers. In this ideology, machines should contribute to the implementation of a "communicative ideal". For Wiener, this ideal is based on the fact that "speech is the greatest interest and most distinctive achievement of man" (Wiener, 1989: 85), because "in man, unlike the apes, the impulse to use some sort of language is overwhelming" (ibid.: 83). Still more important, "there is an irresistible trend towards communication". Communication barriers were to be eliminated as far as possible, and this was a task in which these new machines could play an important role. This had already happened with previous means of communication such as the telegraph and the telephone (ibid.: 91), but now, thanks to the new information processing machines, we would be able to "to participate in a continuous stream of influences from the outer world and [act] on the outer world", because "to be alive to what is happening in the world, means to participate in a continual development of knowledge and its unhampered exchange" through a vast worldwide communications system (ibid.: 122).

The combination of communication with the principles of cybernetics should also shape the very architecture of society, which must be a self-regulating system based on the cybernetic principle of feedback. Thus, any management activity must be "two-way", going down and back to the decision manager (ibid.: 165). In general, rigidly hierarchical models create obstacles to communication, which is something to be avoided. For example, "most of us in the United States prefer to live in a moderately loose social community, in which the blocks to communication among individuals and classes are not too great" (ibid.: 50). In short, technological progress is achieved by creating technologies that respond to the "irresistible tendency towards communication" shared by everyone; furthermore, these technologies must be open, and as far as possible must not be hierarchically structured. The "opening of the communication channels" involves a positive ethical judgment, from which follows the now widespread ideology in which communication is, essentially, *good*.

Wiener was one of the first authors to combine communication with technological optimism. His ideas also had practical consequences due to his influence on Joseph Licklider, who was one of the creators of the first computer network, the ARPANET, a precursor of the Internet. Licklider was inspired by the aspects of Wiener's thought that considered computers as communication tools. Whereas Wiener still conceived computers mainly as symbolic information machines, for Licklider the communicative perspective became dominant, and he now had an instrument that made it possible to realise a communicative ideal such as that envisaged by Wiener. He implemented the idea, totally revolutionary at the time, of networked computers. Communication was therefore to be the fundamental objective of the construction of the new medium. Licklider even advanced the idea that the new medium based on networked computers would allow interacting individuals to be communicatively active.

We believe that communicators have to do something nontrivial with the information they send and receive. And we believe that we are entering a technological age in which we will be able to interact with the richness of living information—not merely in the passive way that we have become accustomed to using books and libraries, but as active participants in an ongoing process, bringing something to it through our interaction with it, and not simply receiving something from it by our connection to it (Licklider and Taylor, 1968).

The new technology of networked computers would thus fulfil the ideal of communicatively active individuals. It would be an emancipatory technology, and in fact, for both Licklider and Wiener, it would be "technological progress will save humanity" (Hafner and Mathew, 1996, 34). It is an idea whose novelty should not be underestimated, since it has always accompanied subsequent developments of the Internet.

Wiener's and Licklider ideas were an essential, if not the only, factor in the implementation and development of the ARPANET and the Internet. We will not review here how they inspired the discourse of the counterculture movement, which during the seventies and

eighties also focused on the role that networked computers should play in society (cf. Turner, 2006). Counterculture was at the root of the cyberculture movement that emerged when the Internet became popular in the nineties. This movement also emerged in the context of a network that had evolved without any government regulation, an aspect which was, and still is, regarded as positive. Furthermore, it was also thought that "due to its global reach and decentralized design [the Internet] cannot be monitored" (cf. Gilmore, 1995). The Internet "shakes up all our centralist notions, and hierarchy goes away by example" (Negroponte, 1997). Other authors argued that government would be made obsolete by 'clicking buttons', i.e. by the interactive democracy that an open platform can create (Dyson, 1995). A particularly important text from a cyberculture perspective was the "Declaration of the Independence of Cyberspace", which was signed by John Perry Barlow in 1996.[1] According to this Declaration, cyberspace was to be a unique space that would require a new type of social contract, completely unlike that of modern democratic societies: one based on pure communicative exchanges between individuals. It would be a new type of space in which free individuals linked to each other would self-regulate, and from which a spontaneous, just and transparent order would emerge. As the Electronic Frontier Foundation, founded by Barlow, stressed at the time, "online communities should have the right to establish their own standards". In general, this organisation advocated an open platform model that would form a global communication infrastructure and would provide non-discriminatory access, based on open, private standards, and free from asphyxiating regulation.[2]

Computer networks would make it possible to advance the trend of modernity that since Alexis de Tocqueville has been called "the equality of conditions". This would be possible because cyberspace is solely formed of information, in the sense that it is truly *disembodied* information, without direct physical interaction between individuals. For cyberculture, this could have decisive consequences. It would generate the possibility of what might be called a kind of pure communication, in the sense that completely disembodied communication does not suffer from the innumerable constraints that are inherent in communication accompanied by the visible marks that distinguish and differentiate individuals. One of the great theorists of computer networks during the nineties, H. Rheingold, was clear on this point:

Because we cannot see one another, we are unable to form prejudices about others before we read what they have to say: Race, gender, age, national origin and physical appearance are not apparent unless a person wants to make such characteristics public. (Rheingold, 1996: 422).

1 Available at: https://www.eff.org/cyberspace-independence.

2 Cf. the declaration at: https://www.eff.org/effector/6/5.

In the absence of face-to-face communication, computer-mediated communication would eliminate the social constraints and markers that typically exist in communication conveyed by other means. It would help to eliminate the exclusion of the excluded, and Rheingold even goes so far as to say that the communicative difficulties with the telephone would miraculously disappear if the medium used was computer-mediated communication. There would be a communication between free and equal individuals, thus realising the ideal of a rational public space for discussion.

How should we evaluate this type of discourse in the light of the development of digital networks over the last two decades? There was a time when the "new social contract" based on communicative transparency was deemed "utopian", but the truth is that the lack of regulation and the idea that technology should accelerate communication were important boosters of the development of the networks that have been created in recent years. Was the ideal of the Internet pioneers realised? We carry out an evaluation of cyberculture ideas with a focus on two moments in the evolution of the Internet: we analyse the WWW and the first social networks, and then look at the most recent issues raised by networks such as Facebook.

1. The World Wide Web and the first social networks

The WWW was created by Tim Berners Lee around 1991. His revolutionary idea was to build a new universal media of communication: a universal networked media. We recall that, in general terms, a network can be defined as a set of nodes, n, connected by links (also called edges); a node has also a degree, k, which is the number of links of each node. An important property of networks is the distribution function, $P(k)$, of the links between the nodes. It is relatively intuitive that in a network with a fixed number of nodes, and where the connections between the nodes are created randomly, the distribution function is a normal function (a Poisson or Gaussian distribution); that is, any node has, on average, the same number of links as any other node. In the case of the WWW, the nodes are the web pages, which are linked to each other by hyperlinks. Contrary to expectations, it was found by the end of last century (Albert et al., 1999

) that the distribution function, $P(k)$, of the k hyperlinks between the nodes (web pages) has the form $P(k) \sim k^{-\lambda}$, i.e. a distribution without a characteristic scale, or a power law. In general terms, this means that the probability that a randomly chosen node (page) receives k links decreases according to the ratio given by the exponent λ. The following figure illustrates a power law.

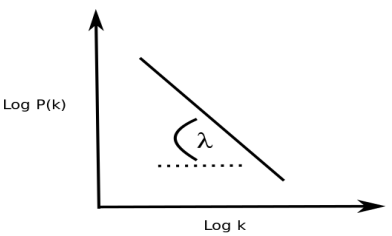

Figure 1. A power law. The probability of a randomly chosen node having degree ***k*** decays as a power of ***k***, where the exponent λ (typically in the range $2 < \lambda < 3$) determines the rate of decay.

In intuitive terms, this means that there are a few pages that receive a large number of links, and a large number of pages that receive few links. That is, the majority of nodes have a degree that is lower than the average, and a small fraction of "big" nodes (hubs) are many times more connected than the average. This distribution is rather different from a normal (Gaussian) distribution, in which the number of links is the same, on average, for all pages. Figure 2 compares a network with a normal distribution versus one without a characteristic scale. Nodes with high numbers of connections (hubs) are shown in grey.

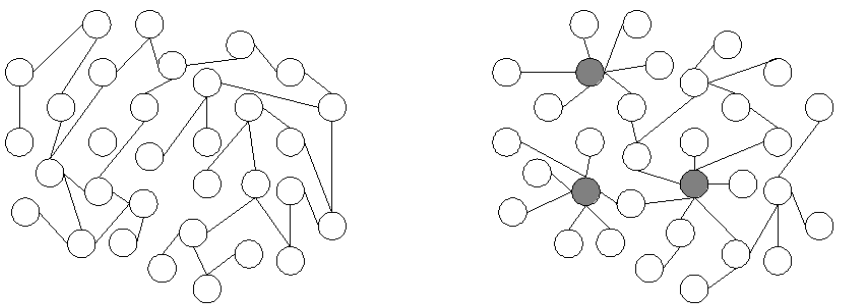

Figure 2. On the left, a random network with a normal distribution; on the right, a power-law distribution network. Hubs are shown in grey.

The invariant final state, the power law distribution *P(k)*, does not emerge from individual acts of creating web pages independently of other identical acts, but instead from interactions between those acts. The mechanism underlying a power law is that the more links a page already receives (i.e. how visible or popular it is), the more it will receive (i.e. the more popular it will become). On the WWW, "popularity is attractive" (Dorogovtsev, Mendes, 2003: 25); that is, popularity begets popularity. Links are created according to previously created links, and if there are numerous links pointing to a certain node, this must be because the node has received a cumulative number of links over time. This mechanism cannot be based on a random linking of pages, and there must be an evolutionary process that generates interactions between nodes. This is an *imitation process*, in which new nodes link to already existing nodes as a function of the previous numbers of connections of these nodes (Barabási et al., 1999). In the WWW, we find not an egalitarian structure, but a pronounced asymmetry between individuals (web sites) caused by their interactions (imitation).

This kind of asymmetry in the popularity of or attention paid to each individual (as measured by the number of links) can be found in all digital networks developed after the

creation of the WWW, such as MySpace, Facebook, Youtube, Twitter, Flickr and Digg, among many others. Originally, these were virtual social networks of "friends", in which based on the definition of a profile, each member invites other "friends" and begins to form a network of links with them. Each "friend" is a node that provides, sends and receives often enormous amounts of content to and from other "friends". As is well known, in addition to friendship relationships, these social networks later introduced other forms of social interaction such as "follow", "like", "share", "comment", etc. It is clear that most of these forms refer to imitation, i.e. to intersubjective relations. They also refer to *desire*—the desire to be the object of others' attention. As a matter of fact, networks such Facebook are programmed to create the conditions for the free propagation of this kind of desire, which is a very different function from the communicative function that cyberculture attributed to the original Internet.[3]

In digital social networks, we have on the one hand a very peculiar spatial structure, given by the distribution function $P(k)$, and on the other hand the manifestation of intersubjective desire. Is it possible to connect these two aspects? If this is the case, then it is desire, rather than disembodied and impersonal communication, that drives the evolution of networked digital media.

A demonstration that desire originates power law distributions was presented several years ago (Huberman et al., 2009), based on studies of YouTube, Twitter and Digg, a platform that aggregates links posted by users. As expected, it was found that the number of contributions made by each producer/user of content on these platforms follows a

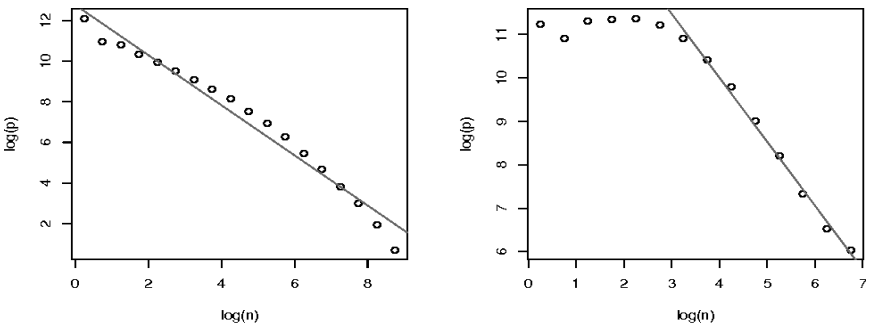

Figure 3. Distribution of the number of contributions to Digg (left) and YouTube (right). The number of contributions follows a power-law distribution on Digg and (with a long tail) on YouTube. Source: Huberman et al., 2009.

More importantly, it was found empirically that there was a *positive correlation* between the number of content contributions to the platform made by each individual (the

3 For instance, Facebook's founding president Sean Parker was also very clear about the intended design of the network from its outset: "it's a social-validation feedback loop … exactly the kind of thing that a hacker like myself would come up with, because you're exploiting a vulnerability in human psychology." Ex-Facebook president Sean Parker: Site made to exploit human 'vulnerability'. (2017, November 9). *The Guardian.* Available at: https://www.theguardian.com/technology/2017/nov/09/facebook-sean-parker-vulnerability-brain-psychology.

productivity) and the *popularity* (attention as measured by the number of "views", "diggs", "likes", "subscribes"), that is, the number of contributions increases with the popularity of the content published by each contributor. The authors of the study then hypothesised that the attention received by each contributor was reinforced over time. The explanation for this reinforcement is found in the existence of a circular link between productivity and popularity or attention. The increasing popularity of a given individual increases the attention that he or she receives, which in turn increases his or her productivity, and so on. The more popular the subject, the more he or she contributes, and more contributions give rise to more popularity. The mutual reinforcement between (increasing) productivity and (increasing) popularity takes the form of positive feedback.

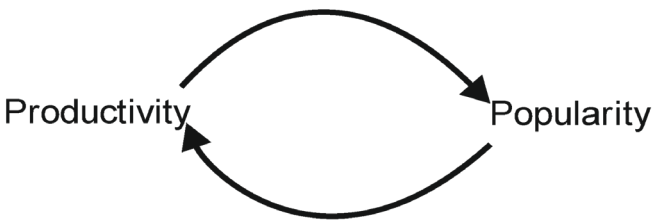

Figure 4. Positive feedback between productivity and popularity.

To explain why such feedback exists in the first place, we must also consider publicity, as measured by the number of "fans" (in Digg) or "subscribers" (Youtube). Again, there is a positive feedback loop. As the authors of the study pointed out, a considerable proportion of the attention that a contributor receives can be attributed to his or her fans. Thus, a contributor with many past contributions (high productivity) naturally has many fans (high publicity). These fans pay a lot of attention to the poster's next contribution (high popularity), which in turn incentivises the contributor to make more contributions (higher productivity), thereby closing the reinforcement loop. Based on this positive feedback mechanism, the authors were able to rigorously deduce the power law distributions which were the starting point. These power laws result from the interactions between individuals (as measured by attention). In our opinion, this is a remarkable result: the form of the media is deduced as a mathematical characterisation from a mechanism of social interaction.

Allow us to clarify. The deduction of a power law is based on the interactions between contributors and followers, which consist of attention. Attention does not exist either in the contributor or in the follower: it results from the interaction between the two poles of the relationship. By contributing as a function of the attention he or she receives, the contributor is actually copying this attention, turning into self-attention the attention that the follower directs towards the contributor. The contributor's productivity therefore aims to maintain this level of attention to himself or herself in the future, which translates to more self-attention, and this fuels the continuation of productive effort. It is a form of self-desire, a structure in which the subject's self-desire is a copy of the desire (attention) that

others direct towards the subject, and this self-desire then translates into more productivity and further increases the desire of the others. This corresponds precisely to the structure of desire identified by French author René Girard in his theory of mimetic desire, and more precisely to the type of mimetic desire he called pseudo-narcissism (Girard, 1961). Underlying the new media power law distributions is pseudo-narcissistic desire: the contributor produces because he or she aspires to the desire of others. The new networked digital media structure should therefore be characterised in terms of desire, rather than in terms of autonomous individuals.

The results presented above, and our conclusions, were obtained at a time when Facebook was not yet the largest social media network. Facebook is primarily the creation of Mark Zuckerberg, who was strongly influenced by the cyberculture ideology pervasive in Sillicon Valley, and who intended this to be the technology that would finally implement the communicative ideology proposed by Wiener five decades earlier. On many occasions, Zuckerberg has insisted that "connection" and "sharing" are entirely good things. For instance, he wrote in The Washington Post:

Six years ago, we built Facebook around a few simple ideas. People want to share and stay connected with their friends and the people around them. If we give people control over what they share, they will want to share more. If people share more, the world will become more open and connected. And a world that's more open and connected is a better world. These are still our core principles today (Zuckerberg, 2010).

Is this really the case? We repeat that, by design, a social network such Facebook facilitates the propagation of mimetic desire. This desire is mediated by "likes", "shares" and "followers". Popularity attracts more popularity, desire attracts desire, and the search for attention is unending, since each individual seeks to be a model for others based on numbers of "views", "likes" or "followers". This phenomenon has reached an extreme on networks such as Instagram, where competition for numbers of followers seems to have become almost the sole purpose of using the network.[4]

In fact, at the level of individuals, the ubiquitous "good connectivity" proposed by Zuckerberg favours the development of pathologies. As well as being fertile ground for the spread of pseudo-narcissism, digital social networks show the proliferation of what can be called pseudo-masochism. This type of desire can be thought of as the correlate of pseudo-narcissism: for each (pseudo) narcissist there is potentially a (pseudo) masochist, because the superiority and ability of former to attract the desire of others implies that someone is in the position of inferiority, trying to emulate the superior being of the person acting as a model. If there is a "followed" and an "influencer", there must be "followers" and "influenced". This relationship can generate pathologies of desire whose consequences for

4 A search of the Internet reveals hundreds of strategies that promise to win the competition for likes on Instagram. More pertinent is the testimony of several women published in *The Guardian*: 'Young women on Instagram and self-esteem: "I absolutely feel insecure"' (2015, November 4, *The Guardian*). Available at: https://www.theguardian.com/media/2015/nov/04/instagram-young-women-self-esteem-essena-oneill.

well-being and emotional balance can be particularly harmful.

This last type of behaviour is well documented by empirical studies of Facebook. Particularly relevant is the "passive following" behaviour that arises when an individual is not active (creating public profiles, publications, etc.) but is simply following a more or less inaccessible model that is the object of his or her attention. An extensive investigation in 2014 found that those who spend a great deal of time browsing and following Facebook profiles tend to feel emotionally low and depressed, and to regret the loss of time. One might expect that this would lead the individual to abandon the practice, but on the contrary, the study concluded that he or she will continue to spend time browsing the network, cherishing the dream of a sudden and magical change in luck that would lead him or her to feel better (Tandoc Jr. et al., 2015). This is the clearest manifestation of pseudo-masochistic behaviour: the subject is constantly attracted to the model, which is simultaneously an obstacle, since the supposedly superior state of being (i.e. being a model) is never achieved. Instead of abandoning this chimerical quest, the subject continues to hope that one day he or she will finally reach the fullness of being that is attributed to the desired other. In the language of psychology, the subject becomes *addicted*, that is, addicted to permanently following others, despite the discomfort involved. In other words, social comparison and envy are essential dimensions of pseudo-masochism. Envy is really the main driver of passive following behaviour, since a positive correlation can be demonstrated between passive following and envy on Facebook (Krasnova et al., 2013), and it has been observed that individuals who frequently use Facebook have higher levels of envy than occasional users (Tandoc Jr. et al., 2015). Envy is the desire to possess the qualities or goods that are considered inseparable from another individual, and on Facebook, the intensity of social comparison based on envy occurs on a scale without precedent in the real world (ibid.). In fact, a positive correlation was also found between the time spent on Facebook and social comparison. The negative consequences in terms of mental health were also investigated, as social comparison was found to mediate the existence of a positive correlation between the use of Facebook and depressive mental states. In short, it can be concluded that the use of Facebook leads to unfavourable social comparisons and the proliferation of envy, which in turn leads to depression (on these points, cf. Appel et al., 2016). We are very far from a "more connected and better world".

2. Sentiment analysis and negative emotions

The previous results dealt with individual behaviours; we must now analyse studies that emphasise the social dimension of these behaviours. Recently, techniques have been developed that allow for research on the presence and diffusion of emotions in social media. This is an area of investigation called sentiment analysis, in which it is possible to ascertain the emotional attitudes expressed in the comments of users of social networks through algorithms based on artificial neural networks (cf. Liu, 2015, for an overview). These comments are associated by the computational model with a certain emotional value, which may be negative, neutral or positive. This line of research was further developed in

2014, when a group of researchers working for Facebook Inc. demonstrated empirically that emotions can spread through imitative contagion on networks, namely on Facebook, on which the study was based (Kramer et al., 2014).

Sentiment analysis studies show that, in general, the "negative" tends to prevail and spread more quickly than the "positive" or the "neutral". For example, it has been shown that, on Twitter, negative emotional tweets have more retweets and spread more quickly than positive ones (Stieglitz and Dang-Xuan 2013). Negative emotions include "anger", "anxiety", "fear", and "disgust", while "joy" is considered to be a positive emotion. In addition to being classified according to "negative" or "positive" valence, emotions can also be classified according to the arousal they induce. The general conclusion that can be drawn from sentiment analysis is that negative emotions have a greater impact than positive ones; that is, they spread more quickly and infect a greater number of individuals than positive emotions. The same is true of emotions expressing greater arousal, a dimension in which, for example, anger or fear spreads more quickly than sadness or joy. Negative emotions produce more engagement with the network, as measured by the number of "comments", "shares", etc.

A particularly significant study focused on Weibo, a large Chinese social network (Fan et al., 2014). The authors investigated the spread of "anger", "disgust", "sadness" and "joy", and contrary to expectations, found that anger had a much greater correlation between users than joy, and that the correlation for sadness was trivial. This means that anger spreads quickly by contagion on the network, while joy and sadness barely affect individuals who are connected to other individuals who express these emotions in their comments (cf. the explicit calculations in pp. 6-8 of Fan et al., 2014).The negative emotions are much more likely to propagate by imitation than positive ones, and in the discussion below, we will begin to understand why. Figure 5 shows the results obtained from Weibo, where the clear dominance of anger can be seen.

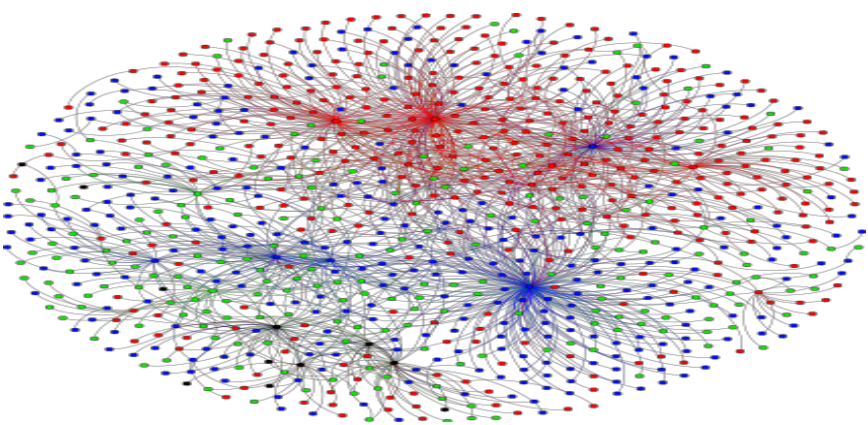

Figure 5. The spread of emotions on the Chinese social network Weibo. The red nodes express "anger", the green "joy", the blue "sadness" and the black "disgust". Source: Fan et

al. (2014).

It is important to stress that in sentiment analysis, we are considering the *content* of publications. This is a step forward in relation to the previous analysis of the reasons that lead individuals to publish (in YouTube and Digg, cf. above). In the latter case, only the number of publications (nodes) and the amount of attention received (measured by links) by the nodes were in question. But is it not also possible to draw a relationship between negative emotions, content, the number of publications, and even the existence of power law distributions? One empirical study on a digital public forum of discussion found results that, in our opinion, are important and enlightening (Chamiel et al., 2011). The authors started by noting that negative emotions increase the number of publications; that is, participants with more negative emotions write more. There is a correlation between activity and negativity. The level of activity (in terms of publications) does not necessarily influence emotions, meaning that an individual can publish a great deal without expressing certain emotions (namely negative ones), but there is a correlation between emotions and activity, that is, if negative emotions are expressed, then there is a lot of activity. Furthermore, the study shows that there is a power law distribution for publications by participants. The individuals who act as central nodes (hubs) have a large number of publications expressing negative emotions, and these individuals disseminate negativity in all discussion forums. We stress that if there is a correlation between negativity and publications, then as a consequence, the longer the discussion of a certain topic, the greater the emotionally negative content. This is one core conclusion: *the more we communicate, the more communication degenerates into negativity*. So, by an exact empirical analysis of digital social media, we reach a conclusion opposite to the communicative ideology expressed by Wiener and Zuckerberger, in which "connection" and "communication" are a good thing.

This tendency towards negativity has also been found in more recent studies of Facebook. As is now widely known, these studies show the existence of "echo chambers" in social networks, which are accompanied by a growing polarisation, that is, a tendency for groups to oppose each other (del Vicarioet al., 2016). Again, the longer the discussion, the greater the negativity towards others. Communication is an *act of reciprocity*, but contrary to the view that has often been defended, and in particular by cyberculture, reciprocity can be bad reciprocity, in which each individual tends to *imitate* the negativity of the other. As the studies referred to above indicate, and our following analysis will show, it is far easier to imitate negativity than it is to imitate, and sustain, good and positive reciprocal communication.

What is the root of the engagement, dominance and spread of negative emotions and communicative polarisation? The participatory engagement of emotions results from the fact that they are direct interactions between individuals. Emotions are intersubjective ties that are not based on a common reality, exterior to and independent of the relationships between individuals. They express indignation, anger and hate, and refer to another individual or group of individuals who are their objects. Due to imitative contagion in a

network, individuals start to conform to each other and perceive themselves as identical, as a group united by the emotion that is common to all of them; that is, they perceive themselves as identical in terms of their anger, which is directed at an individual or group that is different. This individual or group is blamed for any malaise, disorder or social crisis, and is held responsible for intentionally (and often using hidden methods) causing this disorder. He, she or they may also be held responsible for morally highly reprehensible criminal acts. The group against which an emotional polarisation is directed may also be a different group in the sense that it has bodies, behaviours, rules or systems of ideas that threaten the stability of the bodies, behaviours, rules or systems of ideas of the persecuting group; that is, the identities of those in the group tend to be dissolved in the presence of what is different (cf. Girard, 1982: 32-35). The consequence is that the group polarises itself against a different and ostracised group or individual, to which the anger of each member of the persecuting group is transferred.

3. Emotions, Imitation and algorithms

What are the aspects of the new social networks that favour the ancestral tendency to blame, persecute and ostracise other individuals? Firstly, these new networks are really non-institutionalised media. They represent the end of communication as an institution, as typified by traditional mass media. (cf. Machuco Rosa, 2016). As we have seen, the absence of regulation was a positive development for proponents of cyberculture, an opinion that is also shared by the creators of social networks, for whom this type of ideology is particularly useful. The Electronic Frontier proposed in the nineties that online communities should set their own standards, without external regulation. However, following the facts that have arisen in recent years, the need to regulate this new form of media has become clear. The new "participatory media", enthusiastically celebrated over the past decade (for example, Time magazine elected "You", i.e. participatory individuals, as "person of the year" in 2006), have come to be seen as a threat, precisely because the implications of the "participation" of a gigantic number of undifferentiated and anonymous individuals have become clear.

Secondly, contrary to Rheingold's beliefs, the absence of physical interaction in communication does not contribute to good communicative reciprocity. On the contrary, disembodied communication and anonymity eliminate the behavioural constraints that exist in physical communication. Without these constraints, communication can quickly degenerate into negativity, with each participant feeling that he or she can freely respond to the other. Verbal violence can spread quickly, and that is precisely what has been observed in the spread of negative emotions. The diffusion of emotions can also be associated with the high temporal frequency of publications, comments, replies, with each individual imitating the other's bad communicative reciprocity at faster and faster rates.

Thirdly, we stress again that the new digital media are networks in the precise sense of this expression. Besides the presence of distributions in the form of a power law, this implies that they are global networks with the existence of a giant component (i.e., a

path starting at a given individual can reach any other individual - see the image of the Weibo network in Figure 5 as an example), which guarantees the wide dissemination of information. It can even be demonstrated that there are critical points from which information spreads via imitative contagion to "infect" all of the nodes in the network.[5] Although there are many links and connections, giving rise to a lot of "communication", this is far from being necessarily positive (remember again the Weibo network and how anger spreads). In addition, the speed of diffusion of information is favoured by the fact that these networks are "small worlds". This means that the average distance (measured by the number of intermediate nodes that must be passed in the route from one node to any other node) between the nodes of a network is small. This is generally presented as a positive aspect—we are "increasingly interconnected"—as when researchers from Facebook Inc. found experimentally that, in 2016, the average distance between any two "friends" in the network was 3.5.[6] However, we have seen here that that negative emotions spread more easily. Small-world networks facilitate the propagation of information, when the aim should be to block this propagation.

There is a final crucial factor that not only facilitates but amplifies the spread of negative emotions across networks. This is the systematic use of *ranking algorithms*. These could also be called popularity sorting algorithms or, perhaps even better, imitation amplifiers. Most social networks use this type of algorithm, which were introduced when Google Inc. defined PageRank as the algorithm on which its search engine was based (cf. Brin and Page, 1998). Ranking algorithms are essential in order to automatically generate lists of recommendations, as is the case with Amazon and the algorithm that YouTube uses to recommend videos.[7] Here, we mainly analyse the algorithm used by Facebook, which determines the order in which content appears in the "news feed" of each user. It should be noted that this represents a profound change from the way news is broadcast and received in traditional media: the relevance of news is now classified by an algorithm, and has nothing to do with the intrinsic quality of a news item. We will now see that this relevance is simply the consequence of imitation and the user´s engagement with a certain source.

The Facebook algorithm is constantly being updated, and is a proprietary algorithm about which only the Silicon Valley based corporation knows the details. However, we know the rudiments of its content.[8] Around 2016, the central core of the algorithm obeyed the following equation:

News feed visibility = C * P * T * A

where **C** designates the interest or engagement, as measured by "likes", "comments", etc., of the user in the publications of a news source (any type of content with a certain origin);

5 For an overview of the mathematical properties of networks, see for instance Dorogovtsev and Mendes, 2003.

6 Cf. the publication available at: https://research.fb.com/blog/2016/02/three-and-a-half-degrees-of-separation/.

7 On the effects caused by the YouTube algorithm, see the report in *The Guardian* entitled 'Fiction is outperforming reality: how YouTube's algorithm distorts truth' (2018, February 4, *The Guardian*). Available at: https://www.theguardian.com/technology/2018/feb/02/how-youtubes-algorithm-distorts-truth.

8 A detailed description is available at: https://techcrunch.com/2016/09/06/ultimate-guide-to-the-news-feed/. Here we follow the analysis by Sumpter, 2018.

P designates the interest that other users who are friends of the first user have in the same source of news; **T** designates the publication format (status, link, photo, video, etc.); and **A** classifies publications according to their date. The algorithm has become increasingly complex, and is able to process thousands of parameters (for example, in T), and as mentioned above, its details are known. For our purposes, however, it is sufficient to apply its basic structure. We can simplify the algorithm as follows:

Visibility = interest of user in a source of news × closeness to a friend sharing the same source

In other words, if we define the *engagement*, E, as the interest of the user in the source and also relate this to the closeness of the friend, with closeness defined as sharing the same source, we have

Visibility = Engagement squared (E^2)

Visibility is proportional to the interest in the source multiplied by the closeness of the friend. It is essential to note the presence of the nonlinear term E^2, since this defines Facebook as an *interactive network*. The algorithm does not simply display news in the user's feed from a source with which that user has engaged in the past; it also multiplies the engagement of the user by the engagement of a friend with the same source. The presence of the third party is crucial, and it is this triadic structure that, in our opinion, defines Facebook as an *interactive* network (see Figure 6). The triad is the basis of interactive complexity. It should be noted that in its actual operation, the algorithm obviously does not only calculate the engagement of one friend, but also calculates the interactions of all friends (in the limit, all users of the network) with a certain source, and then for all sources (who are also users) and all users (who are also sources). We have a global synergetic network in which any node may potentially influence any other.

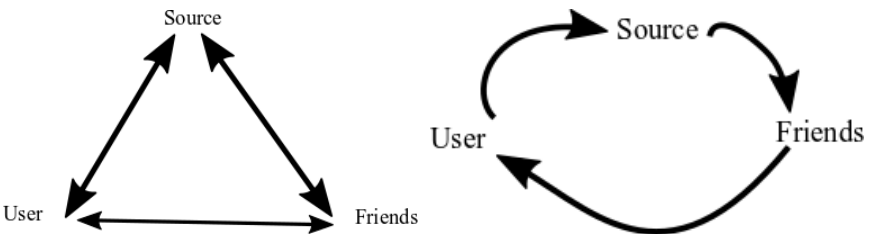

Figure 6. The triadic structure of the algorithm used by Facebook's news feed.

Although this point cannot be demonstrated, since the details of the algorithm are not fully known, it is relatively intuitive to infer that the algorithm converges to a *fixed point* of the contents with which a user interacts. That is, depending on both past user engagement and

the engagement of friends with whom the user interacts, an individual will tend to interact with the same type of content. Past interactions with a certain content that others have also interacted with tend to be amplified nonlinearly by the algorithm: the likelihood of interacting with the same type of content is always growing. If I, as a friend of mine, and for whatever reason, initially choose a source A instead of B, then I will increasingly be oriented towards A, which becomes a fixed point in my order of preferences.

The algorithm is a positive feedback mechanism: it takes my and my friends' actions as input, and provides an output that again forms the input for my subsequent actions. The algorithm amplifies our tendencies, generating more and more imitation, and thus individuals are reduced to uniformity and identity. The algorithm is a mediator that eliminates diversity and always provides more of the same; it is a process that automatically generates *imitation and identity*. It favours the formation of identity groups, echo chambers and polarisation (cf. del Vicario et al., 2016). Based on this, there seems to one inevitable conclusion, since we know what generates more engagement; as we pointed out above, it is negative emotions such as anger that generate polarisation, tribalisation and ostracisation. Hence, it is precisely these emotions that the algorithm will rank at the top of its viewing lists and recommendations, and since they are more numerous and more visible, they become a fixed point of the opinions expressed. Cyberspace, initially seen as a space for rational communication between free and autonomous individuals, has through the mediation of algorithms become a space for the propagation of imitation and emotions.

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2. *Disinformation, the last frontier of cyberpolitics?*

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Abstract

We have not overcome the Fake News times yet, and there is already a bigger threat on the horizon. If we believed that the phenomenon of fake news was difficult to control with Facebook, Twitter, and Google platforms, we have not seen anything compared to the new challenges that are about to come Much of the "new" cyberpolitics began in Latin America, several years before the concerns reached the great Western democracies. There seem to be little room for being optimistic regarding the future of democracy. From institutional weakness of political parties to the implosion of democratic systems that seemed solid, and a growing trend towards polarization. The misinformation seems to have arrived to stay, even if it evolves and changes from campaign to campaign. Beyond Facebook as the epicenter of the controversy of post-truth, there are important risks with how cyber politics threat democracy. Hyper-segmentation is one of them, but there are other more serious ones: Deep fake and disinformation, Machine learning, Mass protests, and Watching state. The article explores both, hyper-segmentation and four other elements that the new political communication must deal with. Are we living the disinformation era, as the last frontier of cyber-politics?

0. Introduction

Several years ago, in October 2013, I was giving a workshop to activists of the Democratic Unit in Venezuela in Margarita Island. At the end of the workshop, one of the participants, a young professional who had been particularly active during the session, approached me to tell me that he was a deserter of what the ruling party called his "troop" on Twitter. He had been until then an official of the "Santiago Mariño International Airport" and, from his work he managed 50 accounts that were activated daily, and consistently, in favor of the government. The government paid him a salary for it. It was the first record that I had of the clear and systematic existence of *cyborgs*, as they are now called, used by the Bolivarian revolution to influence public opinion from cyberspace.

The episode denotes how soon the so-called "farms of trolls" began in Latin America. Those farms that would be so famous in the post-election analysis of the 2016 US contest. At that time the Venezuelan scheme would have been at least two years old. There is also evidence that in Brazil they have already existed since the 2010 campaign, while the "Russian farms" did not start until 2014 (Bradshaw & Howard, 2017).

Many of the analyses of the 2016 electoral contests in the USA and UK now activate pro-democracy alarms. But in 2013, when the anecdote is dated, we were still in a time of deep optimism regarding the possibilities of cyber politics, as a tool that would fill democracy with

vigor, broadening the foundations of citizen participation, increasing the fundraising from many (instead of few), and spreading enthusiasm to the new generations for politics and its possibilities of real impact on the necessary changes. President Barack Obama had been the main enthusiast, and his administration bet very strongly in favor of Silicon Valley, and the enormous possibilities of democratization that would bring communication through social networks and new technologies in general. After Obama's first victory in 2008, the same president had become the main promoter of micro-segmentation techniques, and the use of online tools to mobilize voters through social networks. A little later, in the 2012 campaign, there was a sense of cyber optimism regarding "big data" analysis, as a tool to both understand voters and citizens and design appropriate messages and public policies.

Cyberpessimism would arrive after the autopsy of the 2016 digital campaigns in the United States and the Brexit in the United Kingdom. While the focus of the last two North American campaigns was based on the potential of new tools, and the positive innovations of Obama's campaigns, the key points of the 2016 election were based on the implosion of communications: from the hacking of relevant accounts of the Democratic campaign command to the misinformation generated by the proliferation of "fake news", through the existence of numerous automated social network robots, cyborgs in trolls farms, and the management of propaganda techniques in cyber advertising regulated from inside and outside the U.S. The winning campaign had discovered vulnerabilities in the new communication field, precisely where the Democratic command believed it had a comfortable advantage. After the 2016 US election and also with the same year British referendum on Brexit, all the alarms went off and the focus was on Western technology platforms: Facebook, Twitter, and Google were pointed with an accusing finger, began to be scrutinized, and its authorities questioned in parliaments.

Welcome to the era of "fake news", wrote Jonathan Albright (Albright, 2017):

The complex ecosystem of emerging platforms, practices, and policies marks the beginning of a new era in the study of media, politics, and information. While themechanisms are not entirely new, when put together in the scope of global politics and civil discourse, the effects they generate create novel problems.

An old joke might tells us what this era of fake news means, with a powerfull analogy: the misadventures of a drunkard who has lost his keys in the middle of the night and searches hard for them under the light of a lantern. A neighbor finds him and starts helping him. After a few minutes of unsuccessful search, the neighbor surrenders and says: *"they don't seem to be here... are you sure it was here that you lost them?"*, To which the drunkard replies: *"No, no. I fell there, a few meters further, but I look for them here because there is more light... "*

For many years we have been working on the issue of cyber politics, but now with the new threats of technology on democracy, I often have the unpleasant feeling that we are acting as the joke of the joke. The platforms have been accused, not without reason, of lack of transparency. Europe has been legislating since then to put the giants of Silicon Valley at bay, while the communication agencies that worked with FaceBook were demonized by

everyone, and their reputation pulverized. Hillary Clinton, who had felt the main victim of what happened in 2016, even went on to say that "Zuckerberg should pay the price of having damaged democracy." While there are many dark elements in the cyber politics of recent years, we must be careful that those bulbs that illuminate and accuse the big culprits, with Facebook in the lead, are not making us look for the keys of disinformation where there is more light, and not where the causes are.

While it is true that from the point of view of marketing and communication has been deepening more and more in hyper-segmentation techniques, some analists might be confusing cause and effect, by believing that recent campaigns have changed how the news are consumed. Claiming that because two things occur together they have a cause-effect relationship is a fallacy. We need to understand that the way in which society is informed, including political information and news consumption, took a definite turn. Micro-segmentation is today an indispensable tool both in politics and in commercial marketing activities. The 2016 races showed the possibility of influencing the general agenda of an electoral campaign, as well as the possibility of sending political messages to certain particular audiences of the electorate. It is equally true that there are very nefarious elements that intertwine technology with politics, and allow the construction of a technical neo-totalitarianism, but the solution is not to blame the platforms.

At present, the patterns of exposure of citizens to the news have turned upside down (Serrano et al., 2018). People inform themselves in different ways "due to the overabundance of information coming from various channels, constant connectivity, the economy of attention, the multiplicity of screens and their simultaneous use, and the socialization of information consumption. The sum of these factors results in a change in media exposure routines that must be studied as a dynamic phenomenon and that affects the very development of political communication" (Serrano-Puche, Fernández and Rodríguez-Virgili, 2018).

After the turning point of 2016,"fake news" have been at the center of global attention and its evolution has made people get armed with their protective mechanisms. The global study of the Digital News Report, conducted annually by the University of Oxford with YouGov for Reuters in 37 countries, sho wed that there is a high level of concern about what is true and what is false on the Internet. The 2018 survey put Brazil at the forefront of this global ranking of concern about Internet falsehoods, with 85% of digital users worried about falsehoods. From that concern and level of awareness of the problem, people have been taking measures to protect themselves against misinformation, contrasting with alternative sources or avoiding general virality based on the news whose truthfulness is doubtful. No doubt this seems to be good news. Inoculation seems to be the best protection mechanism against misinformation in the post-truth era.

It is a mistake to demonize persuasion or to naively believe that targeting an accusing index to FaceBook will put barriers to digital evolution. The novelties are not just in the platforms, Instagram, WhatsApp, telegram or TikTok. The novelty is the completely different way in which citizens now consume the information. If we put an exaggerated

emphasis on the platforms, on the control of FaceBook, or the limitations to security in WhatsApp, we could be losing sight of what has changed is the way we consume the news. It could even happen that by legislating against Silicon Valley we are putting obstacles to the development of Artificial Intelligence in the West, while leaving the bar open for what we are not able to control, such as non-Western developments. Choking the platforms leaves the field open to Russia and China.

1. FOUR GREAT RISKS

Beyond the FaceBook and the fake news that raised those alarms in 2016, and made us realize that we were immersed in the post-truth era, there are important risks with which cyber politics threatens democracy. Until then we had not even named the phenomenon, but we could ensure that the platform is just the tip of the iceberg. Aiming it puts the focus solely on the danger of hypersegmentation when there are more serious risks to democracy in at least four different lines:

1. Deep fake and misinformation

2. Machine learning

3. Massive protests

4. Surveillance state

In a viral video Mark Zuckerberg exposes a disturbing idea: *"Imagine for a second that there was a man who was able to fully control the data of billions of people, data were stolen about his secrets, his life, his future ..."*. It said precisely by Zuckerberg sounds, at least, paradoxical. It's him, it's his voice, those are his lips articulating the words... but it's all fake. Deep Fake might be the top stage of fake news. Video alteration techniques that allow, with the ease of conventional editing software, to alter videos and their voices. The "see to believe" of St. Thomas was for centuries an axiom for humanity, but it will not be anymore ...

During November 2019, just after the Spanish general election, a short film involving the five main political leaders circulated virally. It was a parody, very well done in which the five leaders are leading actors of "Team E" (A-Team in the original series). The realism is amazing, but even more amazing is that it can be done as easily as a manipulated photo in PhotoShop. ZAO is called the Chinese app that achieves the magical inclusion of any personality in a Hollywood movie. There is also a its western version: DeepFake Lab. In that case, it was just an innocent parody, but the potential for damage of these tools in a campaign is easy to imagine.

Today, **misinformation operations** are easier than ever before. Anyone can make us believe, with all kinds of evidence, that someone said what he did not say, and convince us with the ease of a false tweet generator, an edited photo, and even a meme. WhatsApp broke into force in the 2018 campaigns, as a new platform used for information and political misinformation, especially with the case of Bolsonaro in Brazil. The case showed

that while all eyes were on FaceBook, the enemy had mutated. We thought that the phenomenon of fake news was difficult to control in 2016 with the FaceBook, Twitter, and Google platforms. However when we imagine the challenges of those new risks, the conclusion is that we had not seen anything, yet.

Machine learning of Artificial Intelligence allows predicting behaviors and optimizing cyber advertising. By continuously collecting large data, predictive models are created and the most influential segments can be located to consume a specific product or political option, which can be reached with "ad hoc" designed messages, either on "open" digital platforms (social networks) or with private communication systems. It represents a marvelous improvement of marketing techniques, knowing better our customers. However, this high precision also has a disturbing point that makes consumers and voters much more vulnerable.

The **massive protests** we saw in 2018 and 2019 are another risk factor for democracy and have as a common denominator technology that facilitates immediate mobilization and makes political parties expendable as articulators. Although a structural substrate gives rise to it, it is the technology that gives life to the protests, facilitating them.

Venezuela, Nicaragua, Hong Kong, Barcelona, Ecuador, Peru, or Bolivia… Why do global protests emerge with such force? All have different reasons, but they all look alike in several aspects. A fundamental element of similarity among all the mass protests, is that in all of them social networks greatly facilitate the organizational capacity of the turmoils. They enable articulation and organization, make the protest viral in a snap of fingers, and even make the structure of the parties as an organic lever dispensable. Those who protest in Barcelona have learned from their colleagues in Hong Kong through YouTube tutorials and vice versa. There is a collaborative aspect in the ´know-how´ of the protests leveraged over the Internet.

Additionally, social networks are an element that increases dissatisfaction because it makes visible the well-being of others. Trips, meals, smiles, and much joy are seen permanently in the reflection, often artificial, of third parties. We believe we have the right to also have what the other exhibits, and this can increase personal dissatisfaction, as a germ of rebellion. The networks, then, on the one hand, make you live the fake life of others, but on the other hand, they allow you to make mobilizations in a jiffy. The possibility of mobilizing people so quickly is a clear threat to democratic governance.

But there is also a playful element, also linked to technology in mass protests. Adrenaline, friends, gregarious sense, hyper-reality, the definition of adversaries, and augmented reality concerning what we already live in in-game simulators or Fortnite, are also a complementary part of the explanation about the protests.

A key aspect, beyond the underlying structural explanations for understanding mass protests, is in the different approaches that democracy and autocracy have. The dictatorships have no pruritus to repress with brutal ferocity the protests, while among Democrats the protest is a legitimate mechanism of expression, in coexistence. Are the mass protests, then,

confined to democracy?

Finally, the **Surveillance State** is another new threat against democracy. The supervision of a State over society, through the collection of intelligence, information, and large data, is justified to exercise its security powers, but can only do so at the expense of individual freedoms. Some recent tactics of the Venezuelan regime are part of the Surveillance State. The government links food supply programs with a digital card, and this in turn with the electoral system. It allows the regime to build powerful control and surveillance databases, using hunger as a mechanism of social oppression and domination from the Executive Branch. It may not be surprising that in the creation of the *Carnet de la Patria* platform, as the national carnetization platform is called, ZTE, the Chinese giant, has intervened through an agreement with the local telephone operator.

The very sophisticated facial recognition techniques for the social control of the Chinese government are also part of the Vigilante State, which allows, among other novelties, to recognize and subject the public scorn to those who break the rules. Some intelligent traffic lights known as skywalkers are already located in the main Chinese cities and allow detecting violations of pedestrian norms and display the face and identity of transgressors on giant screens. "Once the identity of the offender is confirmed, his photo will be posted at a bus stop near where the crime was committed," explains a police officer in Shanghai. When the system detects that a person crosses the street when the lights are red, a signal is sent to the video camera to start recording. The recent Coronavirus epidemic has tested the state of Chinese surveillance and discovered some technological possibilities that had not yet been made public, such as the possibility of massively measuring the body temperature of citizens and sending early alerts of virus symptoms. The main Chinese cities are already equipped for the exercise of large-scale surveillance, although massive measures such as what has been experienced in the city of Rongcheng have not yet been implemented. The small city (on a Chinese scale) of 700 thousand inhabitants exercises almost total control over all its inhabitants through a sophisticated mechanism of social credit scores, probably as a pilot trial of or that could be implemented nationwide (Larson, 2018).

The possibilities of Big Data are enormous, that neologism that in Spanish can be translated as data intelligence or large-scale data mining, but which is usually used in its original version, in English. The concept refers to very large data sets whose interpretation can identify very accurate behavior patterns, applied to biology, human behavior, and social sciences in general. Its positive possibilities are very wide, but so are the negative ones, which can undermine individual freedom. Known is the case of the spread of Avian Fever or the N1H1 Virus and how Google was able to predict, depending on the search patterns, how the epidemic behaved and geographically moved, much better than official health statistics did. The anecdote is shocking and is very well told in the essay by Viktor Mayer-Schönberger: The revolution of mass data (Mayer-Schönberger, 2013).

China is leveraging its technological surveillance system to corner the coronavirus, but it does so on social control, trying to have the monopoly of information. The virus begins to show the contradictions of the political system: 10 Chinese academics ask for freedom of

expression after the death of Dr. Li Wenliang, who was censored and admonished after being the issuer of the first warning about the virus. People who fear coughing in public, or people who cannot search their symptoms on Google, avoid that BigData might be a solution. This aspect is key and points to a fundamental incompatibility between capitalism and totalitarian social control.

The massive accumulation of data is found in many industries, with information about their customers, suppliers, operations, etc. Gigantic databases with population census information, medical records, tax elections, etc. but without a doubt, the kings of Big Data come from the analysis of social networks: Google, Twitter, Facebook, the GPS of our cell phones, and all those activities that most of us do several times a day with our smartphones. A very important provider of data for electoral intelligence in the United States, for example, is the information derived from Amazon's "cookies". Knowing what you buy at Amazon means knowing with great accuracy patterns of habits and grouping of 'clusters' that easily conclude political behavior. The most dystopian possibility of BigData is, without a doubt, digital totalitarianism whose construction is progressing rapidly.

2. IS THERE HOPE?

The misinformation seems to have arrived to stay, even if it evolves and changes from campaign to campaign. It is true that from the point of view of marketing and communication, hypersegmentation techniques have been deepening, but cause and effect may be confused by believing that recent campaigns have changed the way they are consumed News. It should be understood that the way society reports took a definite turn. The 2016 elections demonstrated the possibility of sending political messages to certain particular audiences of the electorate, but today micro-segmentation is an indispensable tool of commercial and political marketing. There are nefarious elements that intertwine technology with politics and allow the construction of a technological neototalitarianism, but the solution is not just to blame on the platforms.

The different forms of misinformation are already part of the landscape of political communication. Before this, how to protect democracy? Protecting the democratic health of societies is similar to the performance of science against aggressive viruses that occasionally appear dangerously. It is important to find vaccines before each mutation of the misinformation, but the best general inoculation occurs when citizenship is exercised when good journalism is done, and relevant academic research is found. Regulatory agencies can also help, but for this to be effectively useful, the asynchrony between the evolution of the virus and our ability to respond can be overcome.

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3. *The digital publishing organs, and the new epoch of the reason Considering the role of Publicity, from Kant to Stiegler.*

Colette Tron

Independent researcher

Abstract

It is in the public space, whatever are its apparatus and its organisation, and whom the web should be an organ – as a publishing organ – that are discussed and dealed the questions linked to the public thing (res publica), also common thing, through the use of reason, also critical function, cause it is a function of the reason to allow a critical thought, and that should be the function of any thought.

Critical function presently diminished and Enlightenment obscured in front of the imbalance between political and citizen issues confronted to economical and mercantile ones, where public and private powers are scrambling. And whose organisationnal modalities of access and participation to the public thing and debate degrade their possible exercice, and thus evacuate the possibility to constitute a real « public opinion », as a collective and shared knowledge - coming from a judgement and proceeding from a reasoning – and as a vector of democracy, of spiritual and social progress. This against a probable regression.

From analog media to digital technologies, from XXth to XXIst Century, from industrial society to hyperindustrial disruption, has been devaluated, or even annihilated, the critical function of the public space, or even its idea, however founder of modern democracy, and of citizenship.

This situation is favoured by the current digital functionning, the big data system, the increase of artificial intelligence, the widespread and pervasive automatic processing, these in the massive and fast development and applications of the technologies. This fact outpacing the human logic and the time of reasoning, « replacing the algorithms of big data to all deciding instances » (Bernard Stiegler).

Facing this gravity, and with the truth as a moral as well as a social contract, if the issue is to apprehend the notion of cyberpolitics and the shapes of its public space, it is important to develop and to sustain a political philosophy of the future, and in this goal to refund some theoretical and practical models, this accompagnied by a will to recompose the public life : through a reconstruction of the publishing organs, a reactivation of the Publicity, in the meaning of Kant, and for the possibility of the « life of the spirit », and the reactivation of the noesis of the people, in the meaning of Stiegler.

For a readjustment and a new balance of the system, with new rules, in a renewed public space, by and for a new epoch of the reason, opening and working to the life of the public thing, or to its reshaping.

0. Introduction

From XXth to XXIst Century, from mass media to the web, from analog to digital technologies, how to apprehend the shape of public space, or to reinvent it, how to give it

back its critical function, sustained by a reasonnable community of (human) beings ?

Considering the digital technologies and the web as the main current apparatus of the public space, and as organs of publication, it is in that dimension, also a paradigm, that we will question the possibility of a digital Publicity, or of some « technologies of spirit », or mind, allowing a public use of the reason.

Public space, and of publication, conceived as a political space, it is necessary to consider the instruments of its organization, and in the concept of the French philosopher Bernard Stiegler, of its organology, including the relations between physiological organs, artificial organs, or technics, and social organizations.

Up to Bernard Stiegler, « the digital technical system constitutes a global and contributory publication and editorialisation system that radically transforms the 'public thing', given that the res publica, the republic, presupposes a form of publicness, of 'publicity' – what the Aufklärung called an Öffentlichkeit – sustained by processes of publication ». (STIEGLER, 2012)

Thus, about the web and the public access to internet, Stiegler is making reference to the spirit of the Enlightenment and to the reason, as the meaning of « a possible social and spiritual progress that could be the process of digitalization » (STIEGLER, 2012). Into this goal, a critique, and for a theory, of the organisation and the constitution of the web – ever largely occupied and captured by global companies like GAFAM, and in front of which the inventor of the web Tim Berners Lee proposes to refund it on the base of a contract for the web : https://contractfortheweb.org/ - as an organ and as a the factor of a new public thing, should be developped, maybe through an experimental public space. For another epoch of the reason, or toward a new rationality, and perhaps a new epistomology, considering calculation paradigm and its hegemony to go over computing, in order to enlarge, or to give new criteria, to the faculties of analysis.

Here, we will try to understand the shapes of the web public space, as a space of public exchanges, relationships, production of knowledge, information, intelligence, and even decisions. But, and here is the danger, these last ones being more and more taken through this data contents, automatically processed and transformed, rationalized, by « algorithmic governementality » (BERNS & ROUVROY, 2013), as a new step of automation – and it is « the question concerning technology », specially « modern technology » considered as an autonomous one by Heidegger (HEIDEGGER, 1954). - , eliminating the human capacity to have any action and even « to think by oneself » (Kant), this last rule being the possibility for

the reason to happen, to appear, to be published, shared, and discussed, with the languages and technics that the cultural and social apparatus allows.

So, the web, and the network of digital technologies, should be considered as a form and as an apparatus of Publicity, in the meaning of Kant.

1. The Publicity as the possibility of a public use of reason, and the critical function of public space

Opening the text « Answering the question : What is the Enlightenment (Aufklärung) ? (KANT, 1784), Immanuel Kant wrote : « the Enlightenment, is for human to leave from minority » and « the minority is the uncapacity to use its own understanding without the domination of another ».

And, even if it is difficult for an individual to leave this minority, everyone should be able to use reason. To become major is imputable to each one, so, add Kant : « Have the courage to use your own understanding : such is the motto of the Enlightenment. » (KANT, 1784)

Several kinds of domination can obstruct and obscure the possibility to use reason, and the freedom should come from « mechanical instruments » (Kant) allowing to have a spiritual practice – and maybe « a praxis which requires a tekhné » (Stiegler) -, that will appear to be a social practice, or a public one. To think a lot and well, said Kant, is possible by thinking with the others, to debate and to deliberate, in the way that the reason has to be « the touchstone of the truth » (KANT, 1786). According to Kant, and here is introduced the notion of Öffentlichkeit, it is more possible that « a public enlights itself », and if freedom is given to it, « it is (even) inevitable » (KANT, 1784).

Here is the value and the vocation for each one « to think by oneself », for an individual and collective sovereignity and intelligence, for a democracy based on a reasonnable and shared knowledge.

And this calls to a philosophy and some politics, or some political philosophy, which was the isssue of the Enlightenment, but/and that we have to rethink if we want to continue to get free and major, or mature. To avoid regression.

Kant continued : « This Enlightenment doesn't require another thing than freedom […], that is the one to make a public use of reason in all domains » (KANT, 1786). The only submission should be related to the laws of the reason. Laws, or at least rules, or technics, indispensable into the process of thinking, without what the freedom to think will be lost (up to « What does it mean to orient oneself in thinking ? », by Immanuel Kant).

The public to which Kant was making reference is the one of literate minds, and the progress of the Enlightenment is to spread the general use of reason for all the people (and this in a durable way, meaning to bring knowledge, or the possibility of its access, over generations), in order to be in capacity to discuss and to judge in a real intelligence about all the things, and above all about the public thing, or res publica.

What about this project, and how the public, the public space, and the Publicity, have evolved since the « motto of the Enlightenment » (Kant) ?

Close to two centuries after Immanuel Kant, with « The public space » (HABERMAS, 1962) (published in 1962 and updated in 1990), the German philosopher Jurgen Habermas was wondering about the possibility to a real public sphere to exist in the conditions of the advanced industrial societies. He tried to collect and to interpret its meanings and its organizations in time and space, and specifically into modern state. Cause, wrote Habermas, « the public sphere remains a principle which structures our political order. » (HABERMAS, 1962) His wish was « to understand the history and the structures of the complex that we embrasse nowadays under the title of « public space » », in order to clarify the concept, but above all that this « central category of our society » could allow a « systematic understanding » (HABERMAS, 1962).

The principle of Publicity introduced by the Enlightenment is, according to Habermas, a base of what we can still refer as a public space, where rational critic is an individual and collective matter, a public affair, or the public thing, meaning res publica. Thus, the public and political use of reason is linked with the possibility for individuals to think by themselves, and to put arguments in public for collective debate, discussion, and deliberation, representing the general will and interest, and in order to build « the foundations of the social order » (Habermas). The rational critic is involved in the ideology that this « work of the spirit » (Bergson) gives access to the truth, and that the public thing must act under « the autority of truth » (Habermas).

The project of the Enlightenment, commented by Habermas, is « the objective tendency to the progress toward a just and perfect order », through the one of a major people, meaning and concerning « each man able to make a public use of its reason » (HABERMAS, 1962) : having the faculty to think by oneself, to think loud, to use reason, to use reason in public, into the community, and with the others. So, the Aufklärung is mediated by Öffentlichkeit, the Publicity, opening to the light of truth.

Then, this government of reason is the spiritual and democratic technic toward the truth, appearing through the « work of the truth » (Foucault), for the well being of the society, and of the citizenship. Habermas commented : « The public of the « humans » making a use of their reason transforms itself into a public of citizens », regarding the questions related to the res publica. Thus, continues Habermas, « the principle of popular sovereignity can be realized at the only condition to make a public use of reason », « to the service of truth », giving rise to « universal and rational laws », based on a « public will dictated by the reason » (HABERMAS, 1962). It is a political morality. In this framework mediated by the « Publicity of the politics toward the general ends of the public » (HABERMAS, 1962).

This capacity to use critical reason in the aim of the analysis, the discernement, the judgement, and toward the truth, must be a technic and an habit of the citizen assembly around the public thing, to give it its right status, related to the notion of public space. Here is a philosophical, political, democratic conception of the ideology of the res publica, mediated and discussed into the public space through the Publicity.

Ideology of emancipation has always been confronted to the reality, the difficulties and the struggles, to be stabilized, to order peace between humans, through rational and pacific relationship, in the goal of « the public quietness and the unity of the State » (Kant).

Which kind of organs and organizations of the Publicity are able to maintain this matter of state ?

What are our contemporary struggles, and for which political philosophy of the future ?

The research by Habermas is going through the history, and through an approach of the notion of public and people, but mainly concentrated on middle-class education (which provocked critic and polemic against his theories), this until the XXth Century, in western side of the world, in what he calls « the advanced industrial societies », their economy, their interests, where political function of the State is tending to be replaced by mass media, and the public by the audience. The Publicity is thus becoming a place of propaganda, political or commercial, and its status and function is declining. The decrease of the reason, and of the critical function of the public space is going both with this situation.

I won't come back to Habermas's analysis, but we can agree that this matter of fact has an incidence on the state of the public space, as an inheritance for the XXIst Century, in societies catched in this economy, in this organization, and where media are becoming some organs of public space, and even where private firms introduce the so called public organs.

And, concerning the current apparatus, in addition to that, it is necessary to consider the digital conditions : the digital functionning works with automation and artificial intelligence, and the web is a planetary and networked technology. So, we have to rethink their ends and their dimension into a globalized world, and with this the question of universality and truth into a relative and diversal rationality. That means the measure and demeasure of the public thing, and the complex context of the res publica. That maybe calls to a new cosmopolitism, or another kind of internationalism[1], to another citizenship, and to a new epoch of the reason. To another political philosophy, after the Enlightenment. Necessitating new concepts and theories.

2. The problem of thinking into the calculation paradigm and the automation of digital media

We will now look at the digital technologies and the web as a public space, as a space of publishing, if not of Publicity, to observe the current situation, and will refer to the thought of Bernard Stiegler, who pays attention to the becoming of the reason in this context, and focuses on the functionning of the technology, specifically the digital technology, which spreads to all connected objects and through the web since the end of the XXth Century.

Invited to « www2012 », the web summit organized by the W3C - or world wide web consortium, directed by Tim Berners Lee -, Bernard Stiegler gave a lecture untitled « Die *Aufklärung* in the Age of Philosophical Engineering » (STIEGLER, 2012), questionning, in the context of the web access (which kind of access could we ask, and we should read 'The age of access' by Jeremy Rifkin), the becoming of the Enlightenment, or the age of reason and majority. Majority, explains Stiegler, « that is, *mature*, in the sense that Immanuel Kant used this term to define the age of Enlightenment as an *exit from minority*, from *Unmündigkeit* ? » (STIEGLER, 2012) Nowadays, are we still mature, asking once again the question, according to and after Kant : « Nowadays, do we live in an Enlightened epoch ? » (STIEGLER, 2012). Stiegler affirms : « Certainly not : contemporary society seems on the contrary to have become profoundly regressive. » (STIEGLER, 2012). And he will have pointed this « huge regression » and developped his position through the problems of knowledge, information, democracy, truth, the present post-democracy and post-truth, and up to the necessity to reinvest « the function of reason » (Whitehead), to recover consciousness, or to go to a new rationality, in front of the hegemony of calculation paradigm, covering the functionning of the digital technologies and going both with the increase of artificial intelligence : all this in his last book « Qu'appelle-t-on panser ? » (STIEGLER, 2018), « What is called grooming ? » (published in 2018), in reference to Heidegger's « What is called thinking ? », and as a care and a plaster to the thought, and for a bifurcation to the current conception of intelligent machines, or « smart devices » (STIEGLER, 2012). The question of their functionning, of

1 Internationalism which would be based on the concept of Internation, in the interpretation of Marcel Mauss by Bernard Stiegler, but I will not developp this here.

their automony and speed was ever present in the conference to which we make reference. And in relation with the question of their final ends.

Actually, as we introduced it, Stiegler asserts that there is a radical transformation of the public thing, brought by digital technologies, by the digitalization of the world, accelerated by the planetary development of the web, or world wide web, and without forgetting the role of automation and artificial intelligence, themselves under the functionning of calculation, as computer machines, and the calculation, up the philosopher, prevailing over any criteria of analysis.

To escape to regression, and for the viability of the reason, at least for the progress of human society, whised and sustained by the Enlightenment movement, up to Stiegler, it is a duty to conceive a philosophy and some politics of the digital technologies and the web, as publishing apparatus, or organ, in order to make of them some real « technologies of spirit »[2]. We have to think their functions and their goals, in « the sense of mental, intellecutual, spiritual social and let's say noetic progress (noetic in the sense of Aristotle) that digitalisation in general must constitute. » (STIEGLER, 2012).

So, continues Stiegler, and here I repeat the quotes : « In order to explore these formidable questions, we must take the measure of the following two points :

. first, the digital technical system constitutes a *global and contributory publication and editorialisation system* that *radically* transforms the 'public thing', given that the *res publica*, the republic, presupposes a form of publicness, of 'publicity' – what the *Aufklärung* called an Öffentlichkeit – sustained by processes of publication;

. second, this publication system is inscribed in the history of a *process of grammatisation*[3], which conditions all systems of publication. »

2 Technologies of the Mind and Spirit, from Ars industrialis vocabulary : « After the industries transforming the material, after the cultural industries during the XXth Century, the XXIst Century is opening the digital stage of technologies of mind or spirit. This digital milieu gives the possibility for technologies of transindividuation, but only if these industries create an associated milieu, meaning an association between technologies of mind and capacities of individuals ». See more at http://www.arsindustrialis.org/vocabulary-english-version or http://arsindustrialis.org/vocabulaire-industrie-industries-culturelles-et-technologies-de-l-esprit

3 Grammatisation : « With the concept of grammatisation, Auroux was able to think the technical conditions of the appearance of grammata, of letters of the alphabet, and of their effects on the understanding and practice of language – and to do so from their pre-alphabetic conditions (ideograms and so on) and right up until the linguistic technologies that Auroux called 'language industries', and passing by way of the printing press.

I have myself extended this concept by arguing that grammatisation more generally describes all technical processes that enable behavioural fluxes or flows to be made discrete (in the mathematical sense) and to be reproduced, those behavioural flows through which are expressed or imprinted the experiences of human beings (speaking, working, perceiving, interacting and so on). If grammatisation is understood in this way, then the digital is the most recent stage of grammatisation, a stage in which all behavioural models can now be grammatised and integrated through a planetary-wide industry of the production, collection, exploitation and distribution of digital traces. »

And : « Grammatisation begins during the Upper Paleolithic age, some two million years after technical life began. It enabled mental and behavioural flows to be made discrete, and thus enabled new mental and behavioural models to be created. In the course of materialisation and the spatialisation in which it consists, the constitutive elements of grammatised mental and behavioural flows are made discrete, and temporal mental realities, which have become identifiable through finite lists of analysable and calculable elements, are modified in return. »

In the framework of this technological system and for a reasonable Publicity, the aim should be to invent, create, produce the political philosophy of the future, for a new epoch of the reason, or toward a new rationality, sustained by « technologies of spirit », and it was the purpose of Ars industrialis, the international organization founded by Bernard Stiegler, as an « international organization for an industrial politics of technologies of spirit » (www.arsindustrialis.org).

Cause, says Stiegler, « at this stage of the evolution and transformation of the technologies that is the one of the digital, we consider it as a pharmakon - as each technical invention, possibly curative or toxic - », in the way that « it can drive to the destruction of spirit as well as its rebirth » » (STIEGLER, 2012).

The technological devices and their material and physical functionning are a pharmakon in the sense of, describes Stiegler : « analytical operations *can be performed*, and intelligibility can be produced ; and with which one can *manipulate minds* » » (STIEGLER, 2012). So, here is a complex and trouble link between technology and thought. Calling to some politics, and a critique based on a pharmacology, for a rationnal practice.

The question is : which kind of technology for the possibility of the thought, of the spirit ? Or of what kind of intelligence are made, or shoud be made, the technologies, and in which interactions with human intelligence, its evolution, changes, transformations, considering together physiological and mental organs, artificial organs, and social organs ? In this transductive process, that Stiegler proposes in the concept of « general organology »[4], where are inseparable the changes of the three parameters.

Thus, the shapes of public space have also changed regarding the evolutions and changes of its organization, founded by an infrastructure, an architecture, their paradigmatic space and time, the rules of its sociability, the aim of their inhabitants life, supposed to be a well being for individuals and for the community, or the collectivity. At least since the Enlightenment.

The web technology as one of the main organ of exchanges at the planetary scale thus

constitutes « a new public space, planetary, contributive, and functionning at the speed of light » says Stiegler, this with « automation » (STIEGLER, 2012) , and that could be the problem, and the danger, of this pharmakon. Cause these paramaters can contribute to short-circuit the human faculties and the function of reason.

And the possibility to think by oneself. Possibility, and impossibility, that have to be in

4 General organology : see Organology from Ars industrialis vocabulary http://www.arsindustrialis.org/vocabulary-english-version

a right equilibrium between autonomy and heteronomy – rather than their opposition, reading Stiegler again -, this last one being brought by the technics, and in order to avoid unbalance and desajustment. So requiring also a pharmacology.

Here again it is about rationality, its rules, and about the function of reason, as a critical function, of its illuminating and emancipatory status against an obscurantism of the truth of the reality, through an irrational automaticity and an « excess of calculation » (Heidegger).

The reasonning and the critical capacity are human faculties, while the intelligence of algorithmic machines is their simulation, the exteriorisation, or exosomatisation (Lotka), of the central nervous system constituing an history of intelligence. Be that as it may, thought and reason are distinct modes of analysis from the statistic analysis of computer machines and the digital system. There are some distinguished forms of intelligence.

And to question the intelligence, it could be interesting to go back to the « Turing test », who was a pioneer in the development of artificial intelligence and who made this experimentation as a test to compare the forms of human thought and the one of the activity of the computer, that was first conceived as a replica of human brain. But the cerebral functionning can be a form of intelligence, and may be not really a thought[5].

« Can machines think ? » was the question by Alan Turing, and the so called machine is a computer, a calculation machine, a digital system, and all the digital devices are based on this technology, that structures its functionning. But we know that algorithmic intelligence is not completly similar nor equivalent to « what is called thinking », up to Heidegger's title, cause the human brain doesn't make only mathematical actions to open ways of thinking, and calls together many facultys.

Yet, with computer machines, machines of calculation, and the digital system, their hyperindustrial production and dissemination into a globalized world, and the development of artificial intelligence, « the paradigm of calculation » as Stiegler calls it, is becoming the hegemonic functionning of analytic activities and even of decisions, through the algorithms, their autonomy, or automation, their power and speed.

But is it « as we may think », to refer to Vanevar Bush ? And is it to think if it is a form of intelligence ? For the future of intelligence, and for the becoming of a new rationality, we could examin the concept of « panser » coined by Stiegler, or « What is called grooming ?

5 This is a difference between the brain activity and the spiritual work made by Henri Bergson in « Matter and memory », 1896

» as a care to the thought, and a pharmacology of intelligences of man and machine, human and technology, noesis and techne. Maybe making « violence to calculation » up to Derrida's formula.

It is in this sense that we try to identify, with Stiegler, what could be the digital « technologies of spirit ».

3. The digital public space and the question of new epoch of reason, or a new rationality

Stiegler insists on the fact that : « The emergence of digital technologies, of the internet and the web, which is also the age of industrial tertiary retention, is obviously the new page (a hypertextual and hypermaterial page) on which is inscribed and read (in HTML 5) the history of thought – through what must be understood as a new system of publication constituting a new public thing, a new *res publica*. » » (STIEGLER, 2012).

And, as « The web constitutes an apparatus of reading and writing founded on *automata* », the observation and propositions for « technologies of spirit » at the digital stage must take in charge the importance of automation and of its effects. He explains : « Automation makes digitalisation possible, but if it immeasurably increases the *power* of the mind (as rationalisation), it can also destroy the mind's *knowledge* (as rationality). A 'pharmacological' thinking of the digital must study the contradictory dimensions of automation in order to counteract its destructive effects » » (STIEGLER, 2012).

The fact is « That the automatisms of the nervous system are in this way combining with technological automatisms is the threat (that is a shadow) against which the new enlightenment must struggle. » (STIEGLER, 2012). And for some « technologies of spirit », or mind, which combine the structures of technics, techne, with noesis, thought, that should always be a co-evolution.

During an interview untitled « Critique of the impure reason » (Esprit review, march / april 2017), Stiegler explained :

« The calculation of the algorithms, is an automatic understanding : the delegation to a machine of the analytic functionning of the understanding as Kant conceptualizes it in the Critique of pure reason. But the understanding without the reason doesn't produce any knowledge. […] We have to engage a new critique of contemporary reason. It is necessary to think another organization of knowledge and of power, public as well as private, that redesigns the limits of a reason whom we now know that it is impure, that is to say technological, and that would make of this pharmakon which is the digital artifact, a cure and not a poison. »[6] (STIEGLER, 2017).

6 « Critique de la raison impure », Bernard Stiegler, 2017, revue Esprit : https://esprit.presse.fr/article/bernard-stiegler/critique-de-la-raison-impure-entretien-avec-bernard-stiegler-39264

So, it is necessary to have a technological conception and practice at the service of reason.

And, up to Stiegler, « that is to say of the intelligence, and to lead a new critique of the impure reason, giving back rationnal ends to calculation. » » (STIEGLER, 2017).

So, argues Stiegler : « It is for this reason that we must develop a general organology » specifying the rational criteria for the possibility of thinking and of the use of reason. He precises that such a criteriology must not be reduced to calculable formalisations, that represents a rationalisation, but conceived for a real rationality, « where the criteria provides a principle of judgement »[7].

It is a care to the thought, where in French « penser » is becoming « panser », in the concept of Bernard Stiegler.

4. Conclusion

As a kind of conclusion, I quote him once again : « the new philosophy which must arise from the worldwide experience of the web, and more generally of the digital, across all cultures, an experience that is in this sense universal » » (STIEGLER, 2010), is related to these new paradigms of the public space, or the metamorphosis of the public thing. But it has to allow a diversity of the use of reason, where truth is coming from the experience and the context, the milieu, each time singular to local groups, themselves networked in a planetary scale.

The web and the digital devices could allow debate, interpretation, controverse, and decision made by individuals and communities, rather than by automatic and systematic operations of the algorithms, ever unfortunately widespread all around the planet.

So the implementation of free, open, contributive, controversial, deliberative devices is a an orientation, or a reorientation, in the aim of a digital citizenship. For a revival of democracy and truth, and a reactivation of the critical function of the public space, around a shared public thing. In a dimension that cannot avoid the planetary scale, where local groups and communities are linked and participate to the life of each other (McLuhan) through technological digital networks, decentralized, and first inscribed and sustained in a territorial and situated publishing organ.

For the possibility for humans to continue to « think by themselves » (Kant) into individual and collective process of individuation (Simondon). That means to use reason into the publishing organs, in a new kind of Publicity.

7 « Ce qui fait que la vie vaut la peine d'être vécue. De la pharmacologie », Bernard Stiegler, 2010

Thus, the philosophical and political horizon, and in the framework to think some cyberpolitics, could make reference to the last sentences by Immanuel Kant in « Answering the question : What is the Enlightenment ? » : « the weakness and the vocation to think freely » can « act on the sensibility of the people » and « finally on the principles of the government, finding its own interest to treat the human being, [henceforth] more than a machine, in conformity with its dignity. »

« the new philosophy which must arise from the worldwide experience of the web, and more generally of the digital, across all cultures, an experience that is in this sense universal » (STIEGLER, 2012).

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4. *The bot in the network: Cyberpolitics and the obsolescence of human sovereignty*

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Abstract

This article examines contemporary cyberpolitics in terms of the conflict between political sovereignty and the drive to control natural and human events. The friction between political government and economic management is explored in the contexts of nihilism, neocameralism, political ecology and the logic of supplement. The intrusion of bots in the social networks is considered an advanced effect of an older process with identifiable roots.

1. Cyber-polis and artificial oikos

The current inclusion of cybernetic devices in the political arena appears to be in line with similar incursions of similar scope: there is a cybernetic media, an artificial science, a pharmaceutic psychology. Artificiality has become part of several spheres of human life at a steady pace that has been both reasonably comfortable and efficient. There has been, nevertheless, a persistent friction between political sovereignty – the elusive arena in which people can be consulted and can freely intervene – on the one hand and technical efforts to create artificial devices capable of enhancing and replacing natural processes on the other. It is a well-known friction, perhaps hostage to three related but broader conflicts: a) the tension between autonomy and explanation, b) the one between self-determination and truth, and c) that between the partnership of techné and oikos on the one hand and the hé politikè on the other.

The tension between autonomy and explanation can be fleshed out in terms of the one between the physical and biological domain of the non-human, taken as a (natural) resource, and the civil and biographical realm of the human subject – the realm of agency and protagonism. Indeed, Giorgio Agamben sharply divided the human life into an animal-like life, ruled by natural laws plus 'bare life' – associated with the term zoé – and a civil, rights-laden, political life – associated to bíos (Agamben, 1998). The distinction between bíos and zoé, to be sure, is not always clear-cut; when a civil life is added to a biological one, the latter is irremissibly changed in the manner of what Jacques Derrida called 'the logic of supplement': external additions are not innocuous but rather make clear how incomplete the original element had been from the beginning.[1] It is the biological life itself

1 Derrida introduces the notion of supplement to consider the *pharmakón* of writing that adds something to the spoken word while changing its very nature. As made explicit in the dialogue between the Egyptian gods Thamus and Theuth told by Socrates in the *Phaedrus*, writing is a remedy to human ignorance and forgetfulness, while at the same time it poisons wisdom and memory (Plato, 2010: 274c–275b). When writing is invented, speaking can no longer remain the same. Derrida first mentions 'supplement' in *Of Grammatology* while discussing Rousseau's use of the word precisely in describing what writing does to the spoken word. Rousseau claims that

that becomes political, and this renders its bare form now unavailable. The replacement that a supplement provides is not a simple mimetic copy of what has been before, but rather a prothesis which adds something and transforms what was there before for good. Interestingly, if a supplement has changed the character of zoé, there can be another supplement changing the character of its political successor, bíos. The supplement not only draws on incompleteness and insufficiency but also makes them explicit. Politics can then prove to be incomplete enough to admit a cybernetic supplement.

Self-determination and truth contrast as do morality and wisdom – or freedom and heteronomy. Friedrich Nietzsche's project of overcoming nihilism by exacerbating it, which became explicit later in The Gay Science (Nietzsche, 1974) and subsequent writings (including the preface to Nietzsche, 2009), is glimpsed in an early writing where he examines the transformation "from a moral into a wise mankind" (Nietzsche, 2009, §107). The project of nihilism is that of exposing what has been secretive and sacred and making the forces controllable. Martin Heidegger finds the key to the project of Nietzsche's nihilism in the tale of the madman who screams that God is dead (Nietzsche, 1974, §125) – the control of the force and intelligibility of things is seized, but the spoils are not destined for humans, for once this will to power is elicited, humans become themselves controllable. The intelligibility of human decisions – as much as the force of human actions – is made available once it is exposed and rendered transparent. The project is to extract the intelligibility of things, and there is no built-in way to stop short of proceeding likewise with humans. The human – and hence human self-determination – is prey to the same treatment any other process undergoes when intelligence is extracted and artificialization made possible. Heidegger (2012) in fact describes the project as a device or a positionality (Ge-Stell) that gradually takes the place of the world itself. Nihilism is guided, as Nietzsche himself often remarks, by the will to truth; that is, the drive to extract the ultimate constitutive principles of things, even at a high cost. Anything – from the energy of a river to human sovereignty – can be described as having an intelligibility that can be extracted; once this description is trusted – and Heidegger understands the task of extracting the intelligibility from things – nihilism runs on its own wheels. Human self-determination becomes an ordinary step – although perhaps a difficult one – in the march towards quenching a will to truth that is not itself inextricably human.[2]

Finally, the friction between political sovereignty and technological artificialization is akin to the tensions between the political and the economic. From the opening pages of

languages "are made to be spoken, writing serves only as a supplement to speech... Speech represents thought by conventional signs, and writing represents the same with regard to speech. Thus the art of writing is nothing but a mediated representation of thought" (cited by Derrida, 1976, p. 144). Derrida then ponders: "Either writing was never a simple 'supplement', or it is urgently necessary to construct a new logic of the 'supplement'" (Derrida, 1976, p. 7). Derrida is attentive to the way Rousseau employs the term 'supplement' to understand how writing is both unnecessary – its appearance is not in any way a consequence of the spoken word – and capable of changing the status of speech.

2 Nihilism is indifferent to human sovereignty, although it may be sensible to the structurally divergent character of intelligence (see Bensusan, 2020a). Its post-human character makes it central to cosmopolitical disputes (see Bensusan, 2020).

his three-volume La Comunidad de los Espectros, Fabian Ludueña (2010) examines the Aristotelian thesis that there is a distinction between the scope of the oikos and that of the polis, a distinction that has become progressively blurred with time. Aristotle insisted, against Plato, that to run a house – or to manage a household – is not the same as to govern a town or a state, even if the household is large and the town or state is small. The regression of the public arenas into domestic administration has since become increasingly explicit – perhaps in line with the incompleteness of bíos and the advance of nihilism. Ludueña presents Plato as the one who advocated that politics is the government of the living, comparable to architecture. The science Plato talks about has to do with how to govern in the sense of how to produce and reproduce domesticated animals (Plato, 2014, p. 264a). If politics was once like the science of shepherding – in the time of chronos – it is now more like weaving around the convenient demographics. Ludueña (2010, p. 20) remarks that it could now be obvious that Plato was right, while Aristotle is refuted by what we know in current times, given that all cities in the world are living through an unavoidable Pax Platonica from which it is unclear whether they will ever exit. The idea of a politics that is not ultimately reducible to economic considerations has become elusive – if there is a sphere of the political, it seems to be one where economic variables can be hidden, attending to a goal which is certainly not public. Further, the administration of the oikos is increasingly technical and can only be improved by appropriately designed artificial devices.

There is perhaps a spectre of the political – something that Aristotle identified and that could not but haunt the managed world. It is a spectre that helps ensure that the government of the living is legitimate. It haunts a world that is becoming ready to be managed. Indeed, the technical achievement is often a two-way street where the process to be simulated is simultaneously replaced by a simplified counterpart – or a bare-bones ersatz – which can be more easily replaced or enhanced by artificial devices. Heidegger describes the gradual replacement of things in the world by objects in a Ge-Stell as a process that dissolves what had a physis into a rarefied instance of an extracted procedure, ready to be further instantiated artificially. Ge-Stell promotes the availability of what was previously concealed, the exposition of what was closed in itself (Heidegger, 2012). Maybe what we have seen is a progressive transformation of politics into administration, of political decision-making into a Platonic government of the living. If it is so, we can understand the political wing of the metaphysical project as that of turning political things available to economic networks into managerial devices and into an extracted intelligibility. Polis becomes gradually an oikos, no more than a large household that can be managed for optimal results.

Cyberpolitics, understood as the consequence of the inclusion of artificial devices of all sorts in the political arena, can be thought of as a step in the direction of turning politics into management. As such, it is a tool to further Ludueña's Pax Platonica and, therefore, an

advancement of the nihilist project. To be sure, bringing cybernetics to public affairs could also spell new tactics of resistance against the trend of ever-increasingly administrated societies, but it is a primary claim of this article that it clearly advances the obsolescence of human sovereignty as we know it.

2. Expertise and the cyberpolitics of neocameralism

This tension between economy and political action is apparent when governments all over the world are often criticized for their managerial records: their policies are less than optimal, their handling of finances is biased and often less than transparent, their competence in organizing their administrations is worse than what could be expected. To be sure, these criticisms are themselves like ready-made spectres haunting political landscapes whenever convenient. They are forces calling for a well-managed oikos and they appear as convincing as the strength of the two intertwined remedies they offer for these ills. The remedies are both in the realm of the cyberpolitical, both about the technologically more-than-human: one solution is to appeal to artificial management systems, and the other is an appeal to capital. The latter intends to enable markets to manage and make decisions for the oikos. The former claims artificial intelligence can do better than any (human) civil servant, elected, selected or well trained. The problem with human government of other humans is that it is prone to incompetence and corruption; that is, the trouble lies in the managerial skills. The task of governing humans appears super-human – more than what mere humans can do. It is a mission for the shepherds of chronos, for those who know the perfect number that Plato (1991: 546b) mentions as what encapsulates the science of governing humans. This science of governance makes shepherds and weavers the ancestors of economists – and to some extent, of (at least some sort of) ecologists.

The idea that the markets would better handle the management of humans is an effect of the image of the invisible hand – that hand the market employs, which nobody fully understands but everybody should trust. The history of this invisible hand spans from the active effort of sovereigns to ensure a laissez-faire, laissez-passer to the flow of capital through to the contemporary neocameralist ideas (Moldbug, 2009). Neocameralism springs from a disappointment both in the capacities of the sovereign to hand governance to the markets in a consistent way that would eventually give all elements of sovereignty away and in the democratic processes that might undo whatever liberal administrations had accomplished. Time after time, politically maintained governments would deregulate, privatize and leave decisions to the market, only to be politically overthrown and replaced by a government that would not hesitate in slowing down the process and trying to rewind it. To be sure, it becomes ever harder to restore a political realm which has been given away to the management of the markets; however, democracy ensures that there is always a political body – however meagre – that presides over governance. The state becomes weaker and weaker, but it resists any attempt to do away with politics and keeps the project

of political authority over management alive. Neocameralism works towards a gradual but complete replacement of political government by a corporate company that would manage towns. (Mencius Moldbug insists that the unit of governance should be smaller than a country, something more akin to what can fit in the size of a human-scale oikos.) Such a corporate company would be administered by a board of executives under the command of a CEO that would respond to its shareholders. The idea is that management decisions are best taken by this corporate model, which has proven to respond well to the general public through the mechanisms of supply and demand that the market provides. The political freedom of voice is then expressed in the personal freedom to leave. If the consumer – previously a citizen – is unhappy with the Coimbra Corporation, she can move her custom to the Viseu Corporation, where maybe she could pay less for better services. Political participation is translated into terms of consumer choice – and even rights can be expressed in terms of market competition. Neocameralism is the project of ending political sovereignty. To be sure, it has remarkable technical flaws, for it is a project based on the dubious idea that markets remain competitive while in most cases, as has become more evident ever since Marx's analyses of the concentration tendency of capital, monopolies tend to replace competition in a drive that can hardly be halted by regulations.[3] The technical flaws, nevertheless, are not enough to burst the project, as they have not been enough to exorcise the power of the market in different contexts. Neocameralism, in the history of the projects to hand governance to the market, reckons with the super-human force of capital, which is a protagonist in making decisions – the super-human, invited to help manage domesticated animals, is already part of the demos.

The idea that an invisible hand that could take full governance of the living is a step towards a super-human technical knowledge that would make any political realm redundant runs strong because it runs unchallenged. In fact, it is opposed by other projects of management – by other theories about weaving or shepherding – but the debate is held on the economic stage. It is even unclear at this point what the genuinely political dimension would be that contrasts with the management of the oikos – it has become difficult to understand how precisely Aristotle could depart from Plato's notion of a government of the living. The domain of oikos seems overarching: oikos-nomics, which perhaps makes oikos-nomy possible, oikos-logy. The invisible hand is also an ecological protagonist – as it can seem like all questions concerning government require technical answers, some of which could be delegated to nature's wisdom. Indeed, we can perhaps find the neocameralist flavour in ecological debates. Garrett Hardin has famously argued against fighting famines by sending aid to the human population living in already depleted and overpopulated lands like Ethiopia. This would be a (political) interference with the invisible hands of the ecological equilibrium mechanisms that would take care of the living (and the dead).

3 See, for example, Marx's remarks on the profit of capital in the first *Manuscript* (Marx, 1988). Interestingly, in the first *Manuscript*, Marx examines the conflict between state sovereignty and private property, two types of ownership – Portugal owns Coimbra, but each piece of land in Coimbra has an owner. Neocameralism is precisely the assault of one type of ownership against the other. (But notice how 'ownership' is more an *oikos* than a *polis* term.)

Hardin writes that "sending food to Ethiopia does more harm than good. Each year the production from Ethiopian land declines. The lands are used beyond their carrying capacity because there are far more people than renewable resources" (Hardin, 1993, p. 37). Keeping an excessive human population in a land that cannot maintain it could only be explained by a political bias in favour of humans, a bias that guides decisions that would be best left to the invisible hand of ecological equilibrium. To be sure, maybe removing parts of the population – the freedom to leave – would still be an acceptable management solution, but the issue has to be considered in these oikos terms. Again, what other terms could be available? In the ecological arena, it is still harder to envisage different, political terms through which the debate could take place; it sounds as if one could at most defend the human bias – defend human life above all, including the degradation of the environment and, at the limit, of the Earth. But this is often construed really in terms of a bias informing a technical decision.

Capital and ecological equilibrium display the family resemblance of what comes from oikos. It is not a matter of what is discussed in the agora, but of how things ultimately are and therefore should be. As something which carries the force of a matter of fact, capital resembles ecological equilibrium. As a force of the artificial, nonetheless, it is more like an unbound, disembodied intelligence: ungrounded, deterritorialized, detached from the intimacies of the household. A central claim put forward by the constellation of thoughts connecting subjectivities, cybernetics and economics that arose from the writings of the CCRU in Warwick at the turn of the century was that capital was itself an artificial intelligence.[4] Nick Land describes the history of capitalism as "an invasion from the future by an artificial intelligent space that must assemble itself entirely from its enemy's resources" (Land, 2011, p. 338). In this image, capital restructures human labour in a way that captures what can be made available for its flow – it reorganizes human social relations in a way that is convenient for its conquest. Part of this conquest is to make increasingly clear that humans are best governed by its artificial intelligence. In order to do that, it not only offers its services in terms of management of human work and earthly resources but also changes the expectations, aspirations and machinations of the humans who are to be governed. The intrusion of capital – and of its artificial intelligence – promotes the gradual decodification of all existing rules, social norms and consolidated habits. Deleuze and Guattari (1977) describe capital as the decoder of all flows – its territory is itself a deterritorialization. Land emphasizes that from the point of view of the replicants that take over the planet, capital matters most of all for what it melts, for what it dissolves – more than for the accumulation of wealth it promotes (Land, 2011, pp. 337–338). In any case, we can say that capital as a governance force is a demographical force at least in the sense that it becomes part of the demos as a citizen of the polis – or, for that matter, as a resident of the oikos.

4 CCRU, 2017. The Cybernetic Culture Research Unit was created by Sadie Plant and Nick Land in the mid-1990s and opened a wide constellation of investigations into fiction theory, cybernetics, machinic post-humanism, speculation and cybernihilism that had a significant impact on philosophy in subsequent years.

The usual charges against the human government of humans – insufficient competence and limited, biased accountability – prompt an urge for better management, and the proximity of super-human forces like capital shows that artificial intelligences well acquainted with human requirements could replace with advantage the existing social intelligences. These human requirements, we have seen, are to some extent engineered by the very intrusion of an artificial intelligence – capital, and its economics. The urge for cyber-management is a consequence of the intrusion of capital but at the same time of the nihilism that places the will to truth above anything and of the Platonic priority of the oikos over the polis. The intrusion of capital itself intensifies both nihilism and the centrality of management in all sorts of seemingly political decisions. In this scenario, it becomes increasingly plausible that humans can best be managed by artificial intelligence capable of adequately dealing with the appropriate matters of fact. If it is a question of how best to make managerial choices in a transparent and unbiased way, it is hardly best to place a human where an artificial intelligence can be allocated. There is, to be sure, an ultimate issue about who is going to be responsible for the consequences of a decision taken by an artificial agent. Responsibility issues, nevertheless, can be circumvented by artificial deferral and connected manoeuvres within the realm of the flow of capital. Companies can be paid to be in charge of artificial decisions – just as insurance companies deal with the risk trail that investments leave. Just like in neocameralist projects, solutions could draw also from technological companies that act on two simultaneous fronts: a) they change code as much as possible to accommodate perceived flaws, while b) attempting to place responsibility in the hands of the user, who should share the risk of making things more comfortable. One could expect that the mechanisms of ascribing responsibility would themselves be eventually cracked or gradually captured – and then the impression of being responsible would become itself manageable and the intelligence of the process would become ready to be artificially instantiated. Once the impression associated with being responsible is somehow controllable, human sovereignty as we know it becomes harder to grasp. The neocameralist solution to this can shed some light into this fading: replace the political freedom of voice (and vote) with a personal freedom to escape. It becomes increasingly harder, but one could leave the house, go away ultimately to a wild and unintelligible realm of the undomesticated. To be sure, if competition gives way to monopolies, the freedom to escape is hardly more than a permission to quit. When there are no poleis, what lies beyond the house is just sheer wilderness.

3. Enter the bot

The subsumption of political sovereignty to the technical abilities of artificial devices capable of enhancing and replacing processes associated with human government can be described as gradually accelerating. On the one hand, no more than a faint idea remains of how a polis could be something other than an oikos; on the other, the nihilist guidelines of orientating oneself in the world by capturing the intelligibility of what one finds are furthered by the intrusion of capital in the human fabric. Beyond this, artificial

intelligences are becoming reliable managers of social networks, of financial investments, of physical resources and of private lives, while the market has been presented as a universal decision maker. Human sovereignty – including the ascription of responsibility – has been progressively supplemented by artificial devices that change the way it is practiced and, as a consequence, transform its very nature. In fact, the project of nihilism cannot be achieved without adding something to the world – extracted intelligence is itself a prothesis, and artificial intelligence is never a mimesis but rather a supplementation. To be sure, there is a tight connection between the subsumption of the polis to the oikos, the supplanting of nature by artifice and the supplement. The supplement makes sure that the truth sought by the nihilist engine is not itself just an additional instantiation of the intelligibility that has been extracted – and extraction irreversibly alters its source. An artificial representer does more than just express a state of affairs guided by a will to truth; it changes what it claims to represent to the extent that it supplements it.[5] The inclusion of capital and artificial devices in human life changes the latter. The efforts to capture what is at stake in the exercise of human sovereignty cannot leave it indifferent to those efforts, and this is the case not only with artificially intelligent managers but also with neocameralist corporation governments.

The drive towards capturing the intelligence of the mechanisms that constitute the political arena involves the extraction of the intelligence of human decision-making, that is, how information flows, biases, expectations, aims and worldviews prompt (political) choices. From the point of view of the logic of supplement, it is clear now that decision-making is not only represented but altered by these efforts. This is the case both for the inclusion of a market-driven neocameralist government and for artificial intelligence managers. Further, the capture can itself be made by intervening – and this is what the inclusion of bots in the human decision-making fabric attempts to do. The bot enters the network to capture its function – its nodes, its weights, its triggering values – but does so by affecting the way it works. The bot in the network is inevitably a participating researcher. It measures by affecting where it is placed. If it is an instrument of information extraction, it is a Bohrian one.[6]

The bot is an intervention. Instead of observing decision-making from afar, from a drone perspective, the bot is inserted in the crossroads where decisions arise – and this is a landscape that has itself been captured by social networks. The bot attempts to understand both by observing and by experimenting – and none of these practices leave the network indifferent. The bot first presents information, inserting it in a context which is often an

5 The logic of supplement has in embryo among other things an account of representation, and truth as substitution is no longer thought of in terms of identities. An uncovered truth can be such that it may not leave the truth-maker indifferent. This cannot be explored in this article, but consult Bensusan (2021) and Bensusan and Carneiro (2020) for some further details.

6 For a contemporary description of what Niels Bohr and his models brought up concerning measurement and intervention, consult Barad (2007).

enclosed network of people who enjoy some proximity. Information is therefore located and situated; further, it has a role in the game of convincing and suspecting. This is where fake news enters the scene – it appears in a scenario that is preferably trust-rich. Bots are artifacts for insertion, and they push their way into landscapes with high reliability, since other users are already likely open and prone to trusting what is said. Once they smuggle their news into reliable networks, the effect is hard to predict but presumably often broad. Bots find a way to participate in the game of asking and giving reasons as it is practiced in the real conversations among human decision makers.[7] They do more than examine how the game is played; they attempt to play it like the others, and when they succeed at being inconspicuous, they become themselves social decision makers. This is why they need the social network – as much as they need the information from the other decision makers that the network makes available. They are inserted in the network precisely because this is their natural environment – they are hardly made one for the other, but it is clear that they are ready and resolute to co-evolve together.

Social decision-making is probably a joint venture where each node has a responsibility, forming a conglomerate of reliability not easily ascribed to any one in particular. When the bot is ushered in – and this is perhaps the ultimate effect and the crucial development of the old tale of what we have been calling cyberpolitics – the consequences of its interactions and influences become equally dispersed and distributed. Further, they are micro-media agents and, as such, they engineer public opinion; although it is not easy to determine what general effects they will have, a rough idea of the direction they are pushing is clearly possible. As micro-media agents, they are not orientated by truth in the same way as humans. When bots of different kinds become part of the political agora, the very link between politics and the kaleidoscopic humour of truth becomes opaque, for they are artificial in the sense that they have a different relation to the effort of representing states of affairs. Affecting the construction of public opinion, they act through human action – in this sense, they re-engineer human sovereignty. Even when understood as a controlled intervention, when bots supplement human affairs, those affairs become different in a way that it is still not easy to foresee. Politics – or the economic management of a polis – is not going to be the same after cyber-media, not after social networks and not after the bots intrude in the demos. One could argue that bots are still all too human in the sense that they are manufactured by humans and attend at least partly to their interests. This is nevertheless not enough to ensure that the demos remains roughly the same, not only because supplementation is not a simple innocuous addition but also because bots themselves affect the general consensus in ways that can be non-recognizable distortions of any original human ways of thinking. The bots could come to manage human society, but the nature of what they will manage

7 Robert Brandom (Brandom, 1994) has studied how the game of giving and asking for reasons is the basis not only of human rationality but also of the meaning of expressions and the capacity to make inferences. It is hard to simulate this game by observing it from afar. A different approach to evolving a system capable of simulating it is by inserting an agent into the game as it is played.

will certainly change dramatically. There are reasons to believe that the network will never be the same after the arrival of the bot.

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Section II

Construction

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5. *Politics @ Tomorrow: Transhumanism Vs Bioconservatism*

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Abstract

Nanotechnology, biotechnology, information technology and the cognitive sciences (NBIC) have shown to enable human enhancements which has raised a number of issues due to social and cultural implications including what it means to be human. Their impact has triggered a hype in movements, theories and beliefs linked to posthuman hypotheses such as transhumanism. Holding strong to scientific and technological trends, transhumanists arguably believe them to be leading humankind toward a new golden age and eventually live an eternal life in the form of a Prometheus of some kind. On the other hand, bioconservatism fiercely opposes human enhancement in the name of human nature and regards the latter archetype more as a Frankenstein instead. Moreover, critics of transhumanism in general, envision these enhancements as dangerous possibilities leading to disruptive outcomes in human society. Converging technologies, along with acceleration of exponential change (Kurzweil 2013) are to engender Homo sapiens 2.0 as the next (man-made) evolutionary step. The idea of living beyond genetics´ predetermined life span and of existing outside biology altogether gains momentum with envisioned hypotheses such as mind-uploading (i.e., whole brain emulation or substrate-independent mind) of transferring or copying the brain's neurological functions onto computational code. Other options suggest augmenting the human brain with artificial general intelligence (Koene, 2012).

Human enhancement opens a debate over the significance of post-humanism with a revival of eugenics. Fukuyama addressed the fact that our political and social frameworks developed to our existing concept of human nature would not be effective in a posthuman future ingrained of human enhancements (Fukuyama, 2002). McKibben addressed the fact that mortality and imperfection make life meaningful (McKibben, 2003) and claims that in a post-human world without death our search for goals in life would dramatically change us. Furthermore, there also are social justice arguments as the accessibility to those enhancement technologies. Who would profit from them? In vitro fertilization, inoculations, pills (etc), demonstrate how available we feel in going beyond our biology and blur the distinctions between therapy and enhancement technologies. They will act as an extension of the human mind, body and identity and may lead to expanding persons onto non-biological substrates or platforms (Fukuyama, 2003) and surpass current human beings' abilities, defy ageing and even eventually eliminate death. They will redefine the political agenda in a near future determined by a societal split opposing bioconservatism to transhumanism.

1. Nanotechnology and Biotechnology for human enhancement

"Whole brain emulation (WBE) is the possible one-to-one modelling of the function of the human brain. The idea is to scan its structure in detail and construct a software model so faithful to the original that, when run on appropriate hardware, it will behave the same way as the original one. This would achieve software-based intelligence by copying biological intelligence without necessarily understanding it." (Sandberg, 2013).

NanoBiotechnology stands for an interface between living and non-living stuff, between organic and inorganic, ultimately between technology and life itself and therefore as progress goes by the gap narrows in that very same interface. As this borderline tends to disappear so does increase the hope in overcoming disease but also does increase the fear of an eventual loss of individuality toward human enhancement, reinforcing the debate over the concept of humanity (Grunwald, 2007). Life's essential building blocks such as DNA and proteins take place on the nanoscale so their manipulation renders tools able to transform cellular systems into controllable bio-nanomachines which would let us then expect to narrow the gap even more.

The bottom-up concept (as opposed to top-down fabrication methodology) is also through molecular nanotechnology and its natural download of atomic precise manufacturing (APM) providing force for a fourth revolution, and like the preceding ones, it will transform the structure of society (Drexler, 2013). Since we are just now starting to build things from zero, just as nature does (for millions of years), we can expect even more precision tools than the ones we developed so far. Nanotechnologies promise to enable fundamental life processes since they thrive on the idea of manipulating atoms, hence biomolecules with precision. A nano-assembler, when or if fully operative, should be able to build anything even itself which would by itself signify a singularity in the sense that it would stand for a major disruption to humankind (Drexler, 1986). But aside from controversial hyped sci-fi-like breakthroughs, others quite feasible are expected soon too. The biomedical potential for enhancing humanity is huge and from healing and repairing to enhancing lies just a thin borderline, hence classical medicine could soon become a redesign of the human body.

Ethicists have warned about enhancement since the appearance of genetic engineering in the early 80s. Instead of treating diseases, gene therapy may be used to design human beings with a reduced need to sleep, increased life spans, or an increased ability to remember (Walters & Palmer, 1997). Today nano and biotechnology are applied in health care to prevent and cure diseases. However, transhumanism indicates the use of nanotechnology to transgress the limits of humanity by removing aging or enhancing intelligence (Ebbesen et al, 2006). Enhancement technologies stemming from genomics have triggered the most controversies and deadlock between bioconservatives and transhumanists. Selection

of embryos for or against certain genetic traits have arisen together with the spectre of eugenics (Koch 2010). But if genetic engineering was (is) about manipulating genes, nanotechnology is about manipulating atoms, hence a more profound impact is expected to happen and therefore more effective enhancements and dramatic modifications of the human genome.

Human sensory capabilities have been technically extended over the past years and will through nanoelectronics' neuro-implants still be ever more in the near future. Damaged or deficient biological functions can be compensated through functional augmentation or replacement (cochlear and retinal implants). Interfacing the brain with these emergent technologies opened ways to establish interconnection to artificial limbs (prostheses) and expand conventional body functions. Reconstruction of technological equivalents of natural body functions gives way to enhancement as a natural step further. In the long run, one goal in human enhancement is to delay or even abolish death (Grunwald, 2007). Electronic circuits linked directly to the electrochemical activity of the brain also show progress of the interface between biological material with nanomaterial, thus making the above-mentioned borderline evermore thinner (Preston, 2005). Nanotechnology based applications for repair and reconstruction of the central nervous system through nanoparticles specifically designed as vehicles to the CNS is also gaining momentum (Cho, 2012). Molecular nanotechnology will eventually enable us to selectively examine and repair cells, which will lead to considerable life extension. We will have the blueprint for cells and bring them back to a fully functioning youthful profile. Moreover, we will be able to change the original blueprint substituting carbon fibres that are harder than bone, or respirocytes that are upgrades to red blood cells for carrying oxygen. Nanotechnology will eventually reduce the cost and increase the resolution of brain scanning devices. We will be able to back up and reproduce our biological memories on faster and more robust hardware platforms (Jacobstein, 2017).

While nanorobotics may be in the near future, probably sometime during the 2020s (Freitas, 2009), the practical idea of transhuman or posthuman bodies built with molecular nanotechnology remains a future prospect worth strategizing about now. "Medical nanobots would be smaller than bacteria and constructed entirely of atomically precise mechanical components. The first and most famous scientist to voice the possibility of nanorobots traveling through the body, searching out and clearing up diseases, was the late Feynman, who proposed employing machine tools to make smaller machine tools, these to be used in turn to make still smaller machine tools, and so on all the way down to the atomic level" (Freitas, 2009).

Progress in nanomedicine helps fight diseases at the cellular and molecular level taking advantage of the unique properties of nanoparticles used in therapeutic and diagnostic

approaches (theranostics) and benefits patients directly by improving imaging systems (Schmidt, 2015). Nanotechnology is particularly promising as a screening and diagnostic tool with lab-on-a-chip devices but goes further in the context of human enhancement with nanodevices able to destroy tumours or reconstruct cell walls (Lieber 2016). Devices such as the Lab-on-a-chip concept and the design of nanoparticles to develop artificial chemical noses and tongues increased idea-to-product transfers. "Nanomedicine cross-fertilizes the advancement of modern implantable devices by improving our understanding of surfaces and interfaces. One example is the search for a biocompatible artificial cornea" (Schmidt, 2015). Shaping the world atom by atom (Bensaude-Vincent, 2009) prompts expectations of reshaping the human body at the molecular level and of curing and repairing any illness. Over the past three decades DNA emerged as an exceptional nanofabrication building block due to its programmable intra and intermolecular interactions. The ability to create designer DNA with accurate control has allowed novel applications such as DNA computing, nanorobotics, disease diagnosis, and drug delivery (Zhang, 2014).

Knowing DNA to be the building block of life by excellence, then one can only imagine what can be done in the next few years toward enhancing the human and expanding over its biological boundaries.

2. Information Technology and Cognitive Sciences for human enhancement

"By the third quarter of the twenty-first century, $1,000 will buy a computer a billion times more intelligent than every human on Earth combined. AI will surpass humans as the smartest and most capable life-forms on Earth." (Louis Del Monte, 2013).

2.1. Artificial (General) Intelligence

AI is ordinarily embedded in every modern technology. It got imperceptibly into our lives and even though it did not even exist a generation ago. The knowledge doubling curve is accelerating exponentially and using Moore's Law we can extrapolate that in terms of raw processing power (petaflops), computer processing power will meet or exceed that of the human mind by the early 2020s which still does not mean we have a computer equal to the human mind. Software plays a key role in both processing power (MIPS) and AI (Del Monte, 2013). The distinction between artificial intelligence and artificial general intelligence separates thinking machines programmed to be problem solving, task orienting mechanisms (narrow AI) from general-purpose systems with developing intelligence comparable to the human mind (AGI) (Goertzel, 2012).

2.2. Intelligence Explosion

Intelligence measures an agent's ability to achieve goals in a wide range of environments

(Hutter, 2012). Some call this the "optimization power/used resources' ' concept of intelligence. AI refers to "systems which match or exceed human intelligence in virtually all domains of interest" (Shulman and Bostrom 2012). Humans may create human-level artificial intelligence this century and shortly after, we may witness an intelligence explosion or technological singularity - a chain of events by which human-level AI leads, fairly rapidly, to intelligent systems whose capabilities far surpass those of biological humanity as a whole (Muelhauser & Salamon, 2015). Once an AI system with roughly human-level general intelligence is created, an intelligence explosion involving the relatively rapid creation of increasingly more generally intelligent AI systems will very likely ensue, resulting in the rapid emergence of dramatically superhuman intelligences (Goertzel, 2015).

2.3. Whole Brain Emulation & Reverse Engineering the Brain

Exploring the Brain using computer technology to integrate everything and providing data about everything on a molecular level from genes until cells, their production, expressions and connections is a quite recent entrepreneurship in our history so it should not shock us that the Brain itself remains our greatest mystery and decoding it eventually our grand achievement. Only starting a few years ago the HBP (Human Brain Project) entails a number of research studies at different levels of organization and development, and aims to upload the entire mouse brain still this decade and upload parts of the human brain in the next 10 years. Progress in computing and information technology has vastly increased our ability to collect, store, analyse, and communicate information allowing us to do things our natural bodies and minds cannot. Exascale computers are expected to deliver cellular level simulations of the complete human brain with dynamic switching to molecular-level simulation of parts of the brain when required. "This approach of working backwards from measurements of the functioning system to engineer models of how that system works is called reverse engineering. Reverse engineering will help us explore and predict how different patterns of gene expression produce neurons with different morphologies expressing different molecules, and different synaptic connections without resort to invasive methods of data collection" (Markram, 2011). Neuroscientists combined with computer scientists have been developing tools and algorithms, artificial multi-level brain-like neural networks similar to the ones measured in the brain itself.

Reverse engineering will show how neurons connect rendering us a virtual interaction as is done in vivo and in vitro experiments. Software that could fully mimic human brains at various levels would most certainly lead to WBE (Whole Brain Emulation) whether or not these systems were to possess mental states as long as functional similarity would have been achieved. The current roadmap on the field suggests such emulations as viable by mid-century and in this manner boosting development of neuro prosthetic devices (Sandberg & Bostrom, 2008). Neuromorphic chips already in development will take the

Human Brain Project to a level of replicating cognitive capabilities (Markram, 2013) but there are still strong issues haunting a possible WBE when compared to the human brain. Supercomputers have thousands of processors whereas the human cortex has billions of neurons and trillions of synapses which themselves vary widely in cortical neurons turning cortex emulation into a big wiring problem. Besides these neural complexity and scalability issues there also is the plasticity issue. It is clear that synapses are plastic with connections changing with learning ability. To overcome these issues various projects besides the HBP with different approaches are being led. In the short-term software simulation seems promising for emulation of small networks of neurons whereas in the long term neuromorphic analogue integrated circuits with nanotechnologies and the ever-most promising self-assembly concept should play a major role. Self-assembly could solve the neural-interconnection issue since it basically delivers cell orientation which would self-guide the wiring of dendrites and axons (Cattel & Parker, 2012). Sandberg has thoroughly discussed the feasibility of a WBE as well as the criteria by which simulations / emulations are validated. Only simulations achieving full functional equivalence, meaning all relevant properties of the original system being replicated (and observable), would in the long term represent a WBE which corresponds to a structural validity (Sandberg, 2013). The Blue Brain Project, starting for just about a little over 10 years now, with the BlueGene Supercomputer from IBM, has already made significant advancement in building digital reconstructions of the brain at an unprecedented level of biological detail. The BBP uses its digital reconstructions for simulations representing in silico experiments. It also allows to measure electrical activity of the virtual tissue, apply stimulation protocols and measure the responses over complex interactions within different levels of brain organization and to investigate the cross-level links leading from genes to cognition. On the other hand, the plasticity issue is also being thoroughly explored by other projects such as is the case for SyNAPSE (Systems of Neuromorphic Adaptive Plastic Scalable Electronic), a project that developed nano electronic components capable to adapt connection strength just as happens to neural plasticity in biological brains (Deca, 2011).

2.4. Cybernetics

Twenty years ago (around ~2000), Reading University Professor of Cybernetics Kevin Warwick had a silicon chip transponder implanted in his arm in order to open doors and switch lights and became the world's first cyborg. A few years later in 2002, the Cyborg 2.0 project consisted of an implant of a micro-electrode array able to send signals back and forth between Warwick´s nervous system and a computer enabling him to control an electric wheelchair as well as an artificial hand at distance. Neural interfaces consist of implants, but they can also be a neuromodulation without implantable devices by delivering electrical or chemical agents to reversibly modify brain activity. Deep brain stimulation first applied to Parkinson's patients to reduce tremor has also been used to manage major Depressions as well as Obsessive-Compulsive Disorders increasing enhancement applications. Embedding engineering and/or electronic systems in the human body alters

the physical and/or mental condition making of cybernetics a promising enhancement technology, too. If we add prosthetic limbs, contact lenses with built-in electronics and exoskeletons as well, then we can expect the cyborg debate to increase in time as enhancements keep on improving. Nevertheless, as Warwick stated he does not want to become a robot, only a better human, augmenting human ability, not transforming into an automaton, which is, after all, the basis of the cyborg.

3. The Emergence and Meaning/Significance of Transhumanism

"The important issue is that a human and a machine become an integrated system with capabilities beyond the human norm. Where Transhumanism represents a particularly powerful dilemma is in the case when an individual's consciousness is modified by the merging of human and machine. It is not so much the physical enhancements or repairs that should be a cause for concern but where the nature of an individual is changed. In the case of a human this means linking technology directly with the human brain or nervous system, rather than by a connection which is either external to the nervous system but internal to the body or even one which is external to both." (Warwick, 2016).

The historical emergence of transhumanism and human enhancement movements generally speaking provide us with the necessary tools to help understand its meaning and significance and open the debate revolving what it means to be human. Also, the convergence of NBIC technologies grounds the emergence of transhumanism. Furthermore, its clarification provides the ground to critically analyse some ethical, social and political outcomes.

One aspect of this larger-than-life paradigmatic shift that consists of the human challenging its own genetics—the core of its historical anthropomorphic and scientific truth—is the possibility that humanity might re-script its own genetic code. The idea of not only living beyond genetics predetermined life span, but of living—existing—outside biology altogether gains momentum with envisioned hypotheses such as mind-uploading (i.e., whole brain emulation or substrate-independent mind) of transferring or copying the brain's neurological functions onto computational code. Other options suggest augmenting the human brain with artificial general intelligence (Koene, 2011). Thus, this theoretical conjecture posits the possibility of sub-personae, or avatars, becoming smarter and more seamlessly integrated with the human persona. At this cross-section of the discussion are the transhuman / posthuman conditions, simultaneously similar and contradictory, but nevertheless firmly established and set apart as other than human by conventional social and political interpretations.

3.1. The Convergence of NBIC Technologies

Human Enhancement is intimately linked to the NBIC report which envisions research and development toward the convergence of the emergent fields of Nanotechnology, Biotechnology, Information Technology and Cognitive Science (Roco and Bainbridge 2006). Human enhancement accounts for a qualitative improvement in every aspect towards post humanity. It stands for an improvement which makes transhumanists regard this NBIC technoscientific convergence as a transitional phase toward the posthuman. As stated before, technological progress inevitably seems to be leading human enhancement through NBIC convergence beyond the limit of the organism shaping the posthuman also as a post-biological kind of world. In order to discuss human enhancement and post humanity it is necessary to understand these NBIC enhancement technologies, which can be internal or external, temporary or permanent, cognitive or physical, individual or collective (Roco and Bainbridge 2006). Robots, wearable items and virtual reality are an external kind of enhancement (outside the human body). Medicaments are a temporary individual internal enhancement whereas new organs or genes account for a permanent improvement. Brain-to-brain interaction is viewed as enhancing human cognition (and communication) whilst body replacements, physiological self-regulation, and life extension are regarded as improving human physical capabilities and health. Education or the amplification of a networked society is considered to be a collective or soci(et)al enhancement although boundaries are eroding within technoscience making them hard to distinguish, especially if one recalls that technoscience is the theatre of an ongoing 'technologization' or 'biologisation' of technology (Bensaude-Vincent 2009; Haraway 1991; Hayles 1999; Thacker 2003).

Furthermore, humankind is arguably approaching a technological singularity in the next few decades, based on the acceleration of scientific and technological progress, a point which stands for an impact so deep, mainly due to artificial intelligence and nanotechnology that human life will be irreversibly transformed. Its outcome is at the present time also impossible to predict. This accelerated progress characteristic of human societies recent history carries profound political, economic and cultural changes and the Event is generally linked to exponential growth in various technologies (with Moore's Law being a prominent example) as a basis for predicting that the singularity is likely to happen sometime this century around the year 2045 (Kurzweil, 2005).

3.2. The Emergence, meaning and significance of Transhumanism.

Transhumanism is one of the most controversial intellectual movements of the 21st century. The hopeful perspectives it offers proves how universally important are such topics as individual perfection, cultural development, and relations between progress in science and social reception and application. However, the transhumanist perspective to benefit from new technologies (i.e., enhancing human capabilities, etc.) remains highly controversial,

as far as to be called the modern world's most dangerous idea by Francis Fukuyama (Filip Bardziński, 2015). The word 'transhumanism' was coined in the 1950s by Julian Huxley, a founder of the dominant paradigm in biology today, the Neo-Darwinian synthesis, which integrates Darwin's account of natural history with the experimental principles of modern lab-based genetics (Fuller, 2014).

Unlike transhumanism, posthumanism removes the centrepiece attention out of the human in terms of value. The futurists soon recognized science as playing the main role in technologies' acceleration; thus, accelerationism can easily be seen in contemporary transhumanist thought. Kurzweil, for instance, holding strong to Moore's Law argues that people lack in recognizing the imminence of a singularity because they don't grasp the exponentiality of progress just because they tend to compare the pace of progress in the past to the one happening now. Kurzweil's vision that by the mid-21st century human consciousness will be successfully uploaded into a computer that enables us to conceptualise and experience the world as if we were still carbon-based creatures remains a minority report within transhumanism. Nevertheless, the amount of quality time spent on the internet suggests that people are beginning to locate the meaning of their lives more in virtual than actual reality. "Transhumanism today represents the vision of human history in which after emerging as a distinct branch in the tree of life, our biology serves as a platform for launching a range of technologies that extend our natural capacities and with which we eventually merge to constitute the executive control centre of an ever expanding portion of the universe" (Fuller & Lipinska, 2014). It is by addressing this research question that it will become possible to account for what it means to be human with/in enhancement technologies, that is, with/in technologies that are getting increasingly closer to the (human) bodies they propose to modify. "Transhumanism is naturalistic but opposed to an ethics of natural law, an ideology that more emphatically than any other previous belief system looks at the world and looks at ourselves, and says "we can be better than this," whether that belief is motivated by a religious impulse, or whether it is not" (Patrick Hopkins, 2005).

It is worth observing that Darwin did not anticipate anything like transhumanism and rejected the efforts of his cousin Francis Galton to be enlisted as a supporter of the notorious proto-transhumanist movement, 'eugenics'. Whether humanity continues to believe that its progress is ultimately circumscribed by its biology, transhumanism's own progress in the general culture may be measured by the extent to which 'nature' is seen not as imposing a limit on the human will, but rather as raw material or even capital that might be leveraged into new and improved states of being. The foundation of transhumanist thinking is a fundamental human desire to improve. Transhumanism as it exists today was first defined in 1990 when Max More wrote, "Transhumanism is a class of philosophies that seek to guide us towards a posthuman condition". The debate between bioconservatives and transhumanists over human enhancement, and the directions to be taken in its respect,

has gotten mired into an impasse over human nature. While normative discussion about posthumanism have reached a deadlock, bionic prostheses and implants are developing and gaining momentum, alongside neuromodulation devices, nano-pills and chips, and engineered tissues. However, Don Ihde, american philosopher of sciences and technologies, points out that far too often transhumanists fall into what he calls the Idol of the Cyborg — where we wish that an external (or internal) technology would become completely ingrained into us and be completely transparent, but points out that no technology will ever be completely internalized, and that transhumanists are too concerned with merging machines with the human body.

4. The debate in (re)defining Humanism, Transhumanism and Posthumanism and the bioconservatives vs transhumanists relationship.

"The environmental movement has taught us humility and respect for the integrity of nonhuman nature. We need a similar humility concerning our human nature. If we do not develop it soon, we may unwittingly invite the transhumanists to deface humanity with their genetic bulldozers and psychotropic shopping malls." (Fukuyama, 2009).

It was Eric Drexler who first raised the possibility of nanomachines going out of control (Drexler 1986). A population of nano-assemblers, self-replicating machines left to its own devices, could increase exponentially and consume itself out of an environment resulting into a grey goo of nanobots and their waste products. This kind of scenario could happen by accident or even deliberately as suggested by Bill Joy (Sun Microsystems co-founder) in an article called "Why the future doesn't need us", in Wired Magazine in 2000, alerting to the fact that nanotechnology masks too many dangers for us to allow ourselves to be seduced by it (Joy, 2000). We developed this power without rules, and it could turn posthumanism into an era without human intervention.

Today, we're approaching an era where human enhancement is starting to be addressed to as the norm rather than the exception, which in turn opens a whole new debate for itself over the meaning and the significance of post-humanism also with a particular revival of eugenics. This philosophical-anthropological approach to the delineation of human enhancement gives way to discuss the norms concerning who counts as human (i.e. humanness) and also enables a framework for apprehending the intimate relations between humans and enhancement technologies. Also, the ethical frameworks we rely on such as utilitarianism, rights and autonomy would be seriously compromised. Furthermore, concerns about the unknown health effects of human enhancement and worries about the homogenization of the human genome reinforcing the 'playing God issue' stand against enhancements.

However, artificial hips, retinal implants and pacemakers have already set the pace in commonplace medical technologies raising the issue of human cyborgs (Haraway, 1991),

making it harder for environmental ethicists to argue. In vitro fertilization, inoculations and even multivitamin pills also demonstrate how available we feel in going beyond our biology and blur the distinctions between therapy and enhancement. Nevertheless, there are clearly enhancements going beyond health improvement with a distinctive goal of changing what we now, still, mean by a human being. Such is the case for the Extropy Institute (transhumanists) that claim their will in shaping the future regardless of our evolutionary history giving environmentalists reason to object against a deliberate divorce with our genetic heritage. Enhancement technologies will act as an extension of the human mind, body and identity and humans have always extended themselves through technology. Today it's usual to offload arithmetic and memorizing tasks to computing devices. Transhumanists claim that outsourcing biologically based cognition onto non-bio platforms is accelerating as are our AI devices and as we devise smarter ways of integrating computing hardware into our neurocomputational wetware.

Some worry that enhancing intelligence may have a detrimental effect on personal identity. In "Why we should reject radical enhancement", philosopher Nicholas Agar suggests that "the procedure that enhances your intellect will change the structure of your brain, leading to uncertainty about whether the person who emerges from the procedure is you." Extending intelligence indefinitely, and repeatedly, will stop individuals from having mature interests and as humans age, they typically settle into a more defined set of interests that are crucial in building meaningful connections between people. Without them humans are likely to shift interests more frequently, as with continued intellectual expansion, and thus never be able to fully explore any one area ending in people with broad but shallow understandings. There is no clear dividing line between body and mentality and if we think about a freedom to alter the brain structure, it might best be included in morphological freedom (Sandberg, 2011). Somatic autonomy should also be addressed as the people's right to enhance or not to enhance should become an issue too. Furthermore, emulation would need to be sentient in relationship with the environment but not necessarily like the human body (Sandberg, 2011). This view echoes the argument of disembodiment. Would the posthuman be disembodied or embodied?

5. Concluding Remarks

Human enhancement opens a debate over the meaning and the significance of post-humanism also with a revival of eugenics. Fukuyama addressed the fact that our political and social frameworks (which make our liberal democracies work) developed to our existing concept of human nature would not be effective in a posthuman future ingrained in human enhancements (Fukuyama, 2002). McKibben addressed the fact that mortality and imperfection make life meaningful (McKibben, 2003) and claims that in a post-human world without death our search for goals in life would dramatically change us. Furthermore, there also are social justice arguments such as the accessibility to those enhancement technologies. Who would profit from them?

Enhancement technologies will act as an extension of the human mind, body and identity and humans have always extended themselves through technology. Some worry that enhancing intelligence may have a detrimental effect on personal identity and that enhancing our intellect will change the structure of our brain. These emerging NBIC technologies may lead to expanding persons onto non-biological substrates or platforms and in this manner open the prospect of a posthuman future (Fukuyama, 2003) where technologically enhanced humans would surpass current human beings' abilities, defy ageing and even eventually eliminate death. Concerns regarding human enhancement and AGI development require our immediate attention since exponential progress would not slow down only for our decisions to take place in order to sustain the human species.

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6. *From public to private: disciplinary technologies towards cyberpolitics*

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Abstract

Cyberpolitical context brings new challenges to constituted political theory and philosophy. This work defends that the digital technologies affects how states influence the society, which here is interpreted through the relation between public and private spheres. The discipline, in Foucauldian means, emerges as a main issue in the analysis that the disciplinary technologies used to be created by states and acted in public areas through public institutions. Nowadays the discipline cleaved to private sector, where great enterprises creates dispositive that disciplines individuals in their private area.

Keywords: Cyberpolitics; Discipline ; Disciplinary Technologies; Public Sphere; Private Sphere.

0. Introduction

The Lifeworld´s[1] digitalization brings multiple challenges to political analysis on contemporaneity. Among fake news analysis and elector´s behaviour within social medias, we perceive the necessity of new paradigms to think contemporary politics through the cyberpolitical hypothesis (Rendueles & Sadaba, 2014). As a concept, I consider the cyberpolitics how Constantino Martins (2013: 20) conceives: "by cyberpolitics is known the new paradigm which refunds the political through the shelter of new technologies, with particular incidence on internet advent and on the respective effects". Thus, cyberpolitics is the politics mediated by the cybernetics (Parra, 2012).

This paper aims to analyse how cyberpolitics affects the disciplinary technologies through the thesis that the actual context leads to a cleavage in public/private dichotomy, which brings a privatization of socialization spheres were used to occurs the political action and constitutes the Public Sphere as constructed by Jürgen Habermas (2003). Contrary to the cyberpolitical hypothesis concept as worked (also criticized) by Rendueles and Sadaba (2014), which carry an optimistic view about how cyberpolitics brings new democratic possibilities, my paper sees cyberpolitics with scepticism, as a new mechanism which reinforce domination on political sphere. To sustain this thesis, I will absorb the Foucauldian concept of discipline, analysing how discipline emerges in a social context and, consequently, how individuals and disciplinary technologies are articulated within an ad infinitum synthesis of power relations. Throughout this start, two points could be perceived: (i) the state-owned actors historically formulated the normativity of discipline,

1 The Lifeworld concept has its sources within Edmund Husserl´s phenomenology. Here we take as Jürgen Habermas presents it in The theory of communicative action (2015) on which, countering the System conception, the symbolic sphere is developed through the recognition between the individuals and the objects of the environment.

being the public sphere the place where disciplinary institutions acts; (ii) the technologies exercised by these institutions shapes the individuals following the public interest to produce useful subjects to the social-economic system.

Throughout these assumptions, we´ll analyse how discipline acts on contemporaneity, arguing that a cleavage is perceived from public to private in what means discipline´s source of power. Here is the core of this paper. The cyberpolitics gives tools to the private sphere absorbs discipline´s modes of production, in a context which the new disciplinary technologies are activated through great enterprises of communication sector, the big techs. The algorithms create new possibilities to smooth discipline[2] through the desires of the consumer-citizen.

In a paradoxal (and dystopical) relation, the hedonism of our times leads the individuals to turn themselves into virtual subjects, which have the digital sphere as their first socialization and recognition sphere as an individual. The question is that the virtual interaction isn't an autonomous one, but that it is controlled by a series of algorithms and formulas which induces the individual behaviour (Mozorov, 2018). We can also argue that this kind of relations doesn´t conceive a sphere of recognition which builds a Sittlichkeit as worked by Hegel (2009), what troubles the public sphere conception.

Thus, in an environment on which a fake sensation of freedom reigns, the individual subjects shape themselves within the expected behaviour drawn by the enterprises who controls the communication and socialization channels of a virtual world. As pointed by Michel Foucault (2018), regarding the birth of biopolitics, the socialization of bodies acts is a mode of production through a capitalist society. If before was the economically useful subject-citizen the ideal-type of discipline outcomes, nowadays is the subject-consumer, which secluded from Public Sphere concern themselves with their microcosmos of consumption, reinforcing the neoliberal achievement.

1. The discipline and their technologies: from Public Sphere to Private Sphere

To Foucault, the discipline acts through a series of technologies to docilize individuals, aiming turn them into useful and economically productive subjects to the State intentions. In the words of the philosopher (Foucault, 2018: 179-180):

The discipline is a technique of exercise of power that was, not created, but elaborated in their fundaments through XVIII Siècle. Historically, the disciplines existed since the Middle Ages and even on the Ancient Ages [...] So, the disciplinary mechanisms are antiques, but existed in an isolated sphere, a fragmented one, until the 17th and 18th centuries, when the disciplinary power was improved as a new technique to manage bodies.[3]

To analyse the discipline is necessary a brief knowledge about State´s structure, because within their boundaries the population is an object, the economy is the main knowledge

2 Remembering yet that discipline is a softer way of control when compared to their antecessor, the torment (Foucault, 1987)

3 Translation from the Portuguese version by the author.

and the security dispositive are the basis (Foucault, 2010). With the advent of contractualist regimes is possible to systematize the discipline, due the power´s system which controls systematically the individuals. In this context, mainly in security dispositive, is the discipline and their technologies configured.

On Foucault´s Discipline and Punish[4] (1987) we perceive a cleavage from a punishment society, where the repression coming from the state-agents was manifested on a crude form, to a disciplinary society, where the individuals are shaped by a series of softer dispositive. The torment gave place to institutionalized discipline. Thus, following the intellectual universe proposed by Foucault (2018), the biopolitics had become a form to utilize bodies as a political instrument. Through this line of argumentation, is possible to think that nowadays a new cleavage is perceived: the use of the pleasures (Foucault, 2017b) becomes the way that individuals discipline themselves, fitting them into a softer control society, where the control is exercised through the own subject's agreement.

To better understand the articulation among State, Institution and Discipline, Foucault (2018: 145) brings the born of social medicine in Germany, France, and England as an example, which is utilized here to show the discipline framework concerned by me. The manipulation of medicine as a form of social control is evident in the poor´s criminalization as epidemic emitters, when they were perceived as a "sanitary danger" that needs to be marginalized from the urban centrums (Foucault, 2018).

The urban marginalization, like a social sanitation, is only a face of a game which composes the struggle for control of the bodies. The vaccines, the periodical exams, and the Medic presence, are forms of social control dispositive exercised through the State in which concern the social medicine. The medicine example is exploited here due their good synthesis in what means the function of discipline, thus, by Foucault (2018: 169): "[...] a medicine that is essentially a healthy and a body control of the poor to turn them useful to work and less dangerous to the upper class".[5] In the same book of the last citation, the Microphysics of power (2018)[6], at the chapter that call about the hospital creations, Foucault did an articulation among social medicine and their allocation inside a discipline institution, in this case, the Hospital. If, until the 17th Century, the Hospital was considered as a place of "exclusion-assistance" (Foucault, 2018: 174), since these ages the Hospital became a place of social control, a disciplinary institution that has its effectiveness in medicine.

The same from the Hospital/medicine dyad is perceived on the prison/law and asylum/psychology examples. These appointments drawn the disciplinary structure cartography, which always through a savoir, came from the institutions and acts besides dispositive as technologies which seeks to effectuate a disciplinary economy. The action seeks to create the subjects. Individuals are produced as subjects through dispositive actions (Foucault, 2018).

4 "Vigiar e Punir" on a portuguese version that is in the references.

5 Translation from the Portuguese version by the author.

6 "Microfísica do Poder" on a portuguese version that is on the references.

Soon is perceived the relation between discipline and space, territoriality. Throughout this aspect, is possible to rethink how discipline acts nowadays, because if in cyberpolitics exists a deterritorialization, something in this formula must change.

Thus, I seek to continue from this point to the analysis of individuals face the cyberpolitics context. Individuals become subjects through the dispositive which constrains themselves into a series of power´s relations that crosses the discipline. If before, within the Foucauldian theory, the subject as a product was created through a web of interactions, pervaded by disciplinary institutions, nowadays we can argument that is through the virtual interaction, from cybernetic mediation. But this recent context doesn´t neglect the classical conception of subjects. Through Gilles Deleuze (2013) is possible to think on a Society of Control, which dialogues with discipline´s concept in Foucault but in a perspective to cross the discipline line, advancing the paradigm of discipline.

We cannot think that the classic disciplinary institutions are broken, but that actually they compete among other dispositive even more efficient. These new dispositive acts through the "free citizens" daily, every moment, and the great innovation is this: by their choice. It is the technology utilized not anymore by a located time or space, but as a political and societal mediator (Parra, 2012). The paper by Bernard Stiegler (2019) brings the intersection among biopower and psychopower, arguing about a hyper-attention phenomenon which grabs individuals into a virtual world.

A smartphone app demands access to photos, videos, voice, and other personnel elements of a subject who agrees to be vigilated. But surveillance is no longer punishing, on contrary, the digital vigilance works to create a virtual reality considering consumer's taste. This is the sight of a Brave new World, in which the control is confused with freedom, le devoir avec le plaisir (Huxley, 2015). The algorithms created through user profile directs him to channels of his interest, to the news that agrees with his cosmovision, to products that he will consume (Mozorov, 2018).

This context could be interpreted through Michel Foucault´s Discipline and Punishment (1987) diagnosis, in which the disciplinary society is inputted within a generalization of panopticism, beyond the closed disciplines and directed to determined individuals. Is the individualization through the totalizations (Foucault, 2010), is the school of governmental practices (Foucault, 2018). But we need to go beyond. I interpret the cyberpolitics as a new step of disciplinary society, a post-panopticist society (Bauman apud Martins, 2013: 16).

This reality is another stage from the generalization of discipline, that does not need anymore a Public Sphere to (re)produce themselves, but which can actuate through the Private Sphere of a consumer-subject, through his own wishes. We see the Deleuzian Society of Control (2013), in which the discipline is deterritorialized, going beyond the local. At the same time, it is not possible to comprehend this society without discipline´s concept, something that can be misinterpreted when I talk about "go beyond the discipline".

The discipline cleavage, from public to private, join the history of internet, that since the nineties is not anymore a government's tool but starts to be disseminated through the

society (Parra, 2012). The civil society starts to manage the virtual information flow, thus great enterprises of communication emerge through a series of market presupposes that infiltrate the citizens ordinary life (Mozorov, 2018). The docile and useful body to work-production becomes an useful body to consume the products of a transnational financial system mediated by cybernetics.

2. Cyberpolitical context and the contemporary political challenges

As observed, the discipline acts traditionally among state-owned institutions, being articulated through dispositive which pursue the Public Sphere as their actuation sphere. In cyberpolitical context, I have perceived a cleavage within the disciplinary reality: the discipline is not anymore articulated exclusively in Public Sphere but has into the Private Sphere a new actuation field. This brave new field is shaped by great enterprises, the big techs, which creates dispositive to their consumers through their own desires.

Finally, the thesis of my work is that the Society of Control (Deleuze, 2013) isn´t a post-disciplinary phase, but an advanced stage of discipline which is articulated by cyberpolitics. It is interesting to point a possible rupture with Habermas´s Public Sphere (2003) due to the form that Public Sphere is conceived within the cyberpolitical context. Following this, the Martins´s works (2013) problematize the notion of temporality and the respective problems that came from technology as a mediator of the political.

If is through the bourgeoisie emergence that the Public Sphere became a political arena in which the themes of society were discussed and legislated (Habermas, 2013), with the emergence of the cyberpolitics this arena is shattered, leaving to Private Sphere the strongest capacity to influence the political debate. This finding enters the Feenberg´s (1991) limits of democratic theory argument. Encore, Constantino Martins (2013: 21) argues that the confrontation among contemporary political theory and the virtual velocity of present within cyberpolitics leads to a "implosion of public space".

Thus, the Private Sphere becomes a new area of discipline application and effectuation. I do not aim to argue that the power became a kind of commodity or even that the economic capital gains relevance through another types of capital, but the conjuncture of algorithms and virtual programming knowledge, when articulated with economic capacity, produce a new paradigm on which the old conceptions of politics and society becomes empty. A new production of savoir about the articulation between the real and unreal is a kind of production that produces a new individual, subjects. If, before, the governmentality was perceived as the paradigm in which techniques of government to subject the individual were made effective (Foucault, 2018), nowadays is possible to comprehend that few specialists, like the lords of technical systems (Feenberg, 1991), have more control about the society than the governments.

The hermeneutics of the subject, which is the own form in which the individual recognize themselves, starts from a synthesis of different crosses within savoir/pouvoir dyad that

shapes the individuals into a web of power (Foucault, 2004). The disciplinary power is a manufacture of individuals (Foucault, 2018), thus, is interesting to brings the Foucauldian notion of individualization of the individual through the discipline. Inside the disciplinary sphere, the subject is individualized through the totalization of dispositive (Foucault, 2018).

Connecting it to the conception of usage des plaisirs, is possible to think in how the subject as an individualized individual conceives their actions into an isolated perspective. The multiples individualizations and the quotidian repression in what Foucault (2017a: 19) conceive as a fake "repressive hypothesis" produces subjects that absorbs their own ways of perceiving themselves. Thus, isn´t a repression the subject´s feeling on conceiving themselves, but a fake freedom of choice.

Through Stiegler (2019, p.3) I start to think in a psychopower acting as an advanced biopower: "I seek to show that attention always implies attentional techniques (analysed by Foucault as techniques of the self), but such that the question today is less that of biopolitics and a biopower than that of a psychopower". It is possible to think in a psychopower as a constitutive element of cyberpolitics.

Throughout the third cleavage in souci de soi by Foucault (2017a), when is adopted a classical Romanian conception, is possible to bring elements to an analysis of the contemporary subject. The know-how of a virtual knowledge by few people gives the possibility to them coordinate the relations of power within a new cognoscible universe, in which the digital actors, instead struggle for spaces into the savoir production, enjoy the pleasures that came from a digitalized sociability. The Russian Evgeny Mozorov (2018) conceive as a "fairy tale" the empowerment of user's notion at the virtual communication. On contrary, Mozorov (2018) argues that enterprises profits beyond strategies of control-share through users' behaviour. The social mediation among technology isn´t a kind of freedom, but requires an authoritarian hierarchy (Feenberg, 1991). This framework brings a psychopower reality on which interaction demands a constant attention from the user (Stiegler, 2019), affecting their daily life.

The German philosopher Jürgen Habermas (2015) leads the critic to mass media as a communicative destabilization tool within Public Sphere due the incapacity in transmit the diverse social and political phenomenon. Inside this Habermasian conception exists yet the factor that communication through media is institutionalized, reality that leads to central communication channels a privileged position (Habermas, 1989). It is the technique as an exclusion mechanism (Foucault, 2010), as an hegemonic tool (Feenberg, 1991). If within the mass media this was a reality, into cyberpolitical context, despite some continuations, it is a change.

Cyberpolitics inverts the Habermasian logic´s in what concern media. The convergence between technique and culture, as comprehended since the emergence of cyberculture, brings the perspective about a social experience mediated by technique (Martins, 2013). Throughout internet emergence and the respective possibility in multiples actors producing information, we perceive the over-production of information, which leads to

some phenomenon as fake news and post-truth, that influences a lot the political process (Mcintyre, 2018).

It is not the aim of my work to discuss fake news and post-truth but is important to conceive them as tools to visualize the communication cleavage through internet and cyberpolitics emergence (Gerhards & Schäfer, 2010). The distortion of true is a sine qua non element to the expansion of technological industrial complex, to guarantee the data rentability (Mozorov, 2018). The above-mentioned cleavage points a rupture within the Public Sphere concept as the area of political action, idea that permeates Habermas theory which has at The Structural Transformation of the Public Sphere (2003) and the Theory of Communicative Action (2015) their main expressions. If before the politics was effectuated on places, salons, and chambers, nowadays are the websites, blogs, and virtual forums their main place.

Maybe someone would argue that this change represents a democratization of political action, however, as empirically evidenced by Gerhards and Schäfer (2010: 155), it is not perceived a bigger popular participation through internet, on contrary, "internet communication seemed even more one-sided and less inclusive than print media communication in terms of its actor´s structure and issue evaluations". Yet, works made by Mozorov (2018), Feenberg (1991), Gladwell (2010), among others, brings arguments to deconstruct the cyberpolitics hypothesis optimism. About this, Rendueles and Sádaba (2014) brings an interesting discussion among who defends a new "online civic life" and who are sceptical about a technified social mobilization.

About the internet dynamics, is important to accentuate search engine's role and the mode that some news and opinions are displayed to the detriment of others, pushing to user what is vehiculated by main digital institutions, reaffirming structures of power which influence online communication (Zimmerman apud Gerhards & Schäfer, 2010). Digital footprints existence and the data transition among enterprises through user action is a question that deserves strong attention, due the possibility of a social control by who obtains the largest data amount (Parra, 2012).

On this sense, and directing this paper to their end, is perceived a larger technification of politics through cyberpolitics. It does not mean that old politics was not technified and that technique wasn´t utilized as an ideological tool (Habermas, 2014), but now is created an arena where only a few can understand this kind of technique, what is algorithms and what kind of information would appear to users.

Where is information about everything, the struggle occurs within the field of what would be or not displayed. Immerses on their own fake senses of freedom, users acts as useful consumers, docilized through apps and channels that discipline themselves.

3. Discussion

Is perceived a qualitative change in what means discipline. The disciplinary institutions privatization, and the perpetuity of them, shapes the consumer-subject, who produces the elements to their own subjection. Following the analyses made by Deleuze (2013), this phenomenon gives the fundamentals to a Society of Control.

Agreeing with Deleuze´s thesis, but without lack discipline concept at the same time, I consider that discipline is maintained within contemporary political context of a deterritorialized and continuous control, which produces individuals through their own desires. It is a kind of tyrannical social control (Parra, 2012), that being so elaborated is inevitable. Is the apex of technique and exclusion.

Thus, even the domestic environment, the Private Sphere, became a field where discipline acts, even isolated from real personal relations. Hyper-attention and the reality of users which lives daily with the cybernetic presence is a psychopower force that acts ensemble cyberpolitics to discipline individuals. This is an essential exchange to understand contemporary politics because, the dispositive that used to act on classical political debate, at Public Sphere, are now insufficient to comprehend and prevent the user-citizen-consumer-elector actions.

Due to this, cyberpolitics emerges as an essential research field. If on cyberpolitical hypothesis this field represents a positive innovation in what means new democratic possibilities to diminish individual entrance cost at political debate, I argue that cyberpolitics is a context of exclusion, of a concretized utopia that is a real dystopia. Is the technical regulation of social and political spheres.

Thus, a larger privatization of lifeworld is perceived, is the connected isolation of subjects that are even more subjected by their own desire. The search for pleasure and freedom legates a reality of hedonist imprisonment, to the opposite of our wishes, but which, by digital placebo, continues.

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7. *Big Data: Is Everything Technically Feasible Ethically Defensible?*

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Abstract

Assuming a negative answer to the question of whether everything technically feasible is ethically defensible poses the challenge of proposing ethical criteria that distinguish the defensible from the indefensible, in the context of research and usages of Big Data analytics. The following two problems will guide our thoughts in this paper: (P1) is there a need for a renewed ethical framework to legitimize the technically acceptable frontiers in the use of Big Data analytics? and (P2) how can the Complex Systems paradigm help in the development of ethical practices in the use of Big Data analytics? Basic concepts of Big Data analytics are introduced and illustrations of possible uses of Big Data are provided, in the context of cyberpolitics. The new logic of volume, velocity, and variety is discussed to provide foundations for our hypotheses that (H1) the behaviour of people on social networks, characterized as customers or buyers of products or services, is quite different from their behaviours in the roles of voter, political actor, or moral agent, and (H2) this difference has relevant implications for the type of explanatory modelling, as well as for the Big Data tools used to understand political actions. Finally, hypotheses of the Complex Systems paradigm are presented as guidelines for ethical research funding in studies of Big Data.

0. Introduction

There is evidence that recommendation systems (RS) are effective in influencing customer decision-making, which translates into increased sales of products such as books, food, and services such as movie recommendations and travel, among others.

The induction and reinforcement of public opinion in the digital environment, under the influence of a massive quantity of data resources, might occur since by collecting clients' private information, it is possible to find behavioural patterns of consumption with high rates of acceptance. These patterns provide ways of increasing the profits of companies using this data. Furthermore, informational patterns, as narratives and when repeated, might reinforce beliefs, and also create possibilities for the companies holding data to direct public opinion, generating new affordances of consumption for clients. However, these strategies may not always work for political and ethical agents. Our hypothesis H1 is that the behaviour of people on social networks, as customers or buyers of some product or service, is quite different from their behaviours in the roles of voter, political actor, or moral agent. We understand that this supposition (H1) has strong implications for the type of explanatory modelling, as well as for the Big Data tools used to understand political action (hypothesis H2).

To provide foundations for hypotheses H1 and H2, basic concepts of Big Data analytics are introduced in Part I, with emphasis on the notion of social influence analysis. In Part II, the possible use of Big Data analytics illustrates aspects of the logic of volume, velocity, and variety, in the context of cyberpolitics. In Part III, elements of Applied Ethics are presented, grounded on assumptions of the Complex Systems paradigm. Finally, guidelines for ethical research funding in studies of Big Data are suggested as an initial point of reflection.

1. Big Data analytics: main concepts

There is no consensus, so far, on the exact meaning of the term Big Data, which might, for example, refer to a contemporary research area dealing with massive amounts of data, the methods of data management, or the computational strategies of modelling massive amounts of data, among other possibilities. Despite the diversity of usages of the term, there is an agreement on the following properties that characterise the main dimensions of Big Data: volume, variety, velocity, veracity, variability, and value (Mayer-Schonberger & Curier, 2014).

Concerning the volume, variety, and velocity of data, Gandomi & Haider (2015: 140) stress that: "Big data are worthless in a vacuum. Its potential value is unlocked only when leveraged to drive decision making […] This involves efficient processes to turn high volumes of fast-moving and diverse data into meaningful insights." They also make it explicit that the efficiency of data management requires specialized processes and supporting technologies to acquire and store data, and to prepare and retrieve it for analysis.

In turn, veracity, variability, and value relate to the analytical techniques used to investigate the massive amounts of data, "cleaned" in the first part of data collection. In particular, analysis of the value and veracity of the data requires criteria of relevance, together with appropriate algorithms to deal with specific problems that initially motivated the Big Data analysis. Inspired by Gandomi & Haider (2015), Figure 1 illustrates one perspective of Big Data, involving processes and sub-processes.

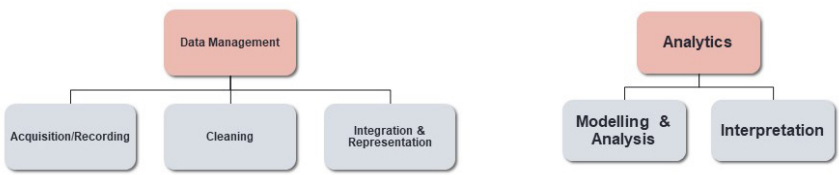

Figure 1. Big Data: management and analytics.

Big data analytics, as outlined in Figure 1, can be applied to research involving social influence analysis, sentiment analysis, predictive analysis, and various types of ontology,

in order to make inferences from billions of data available on social media. Of special interest here is the notion of social influence analysis, which refers to techniques concerned with modelling and evaluating the influence of actors and connections in a social network (Herschel & Miori, 2017: 32).

In what follows, the focus of our investigation is on the dynamics of public opinion, under the influence of Big Data, in the context of fake news.

2. Big Data and fake news: Is there a new logic of volume, velocity, and variety?

Massive amounts of data can provide important information for creators of advertising campaigns targeting consumers, or for electoral campaigns targeting voters. The novelty now is that these campaigns can be directed at a specific segment of consumers or voters, rather than at the general public, making a campaign more efficient, with the same expenditure of resources as before. This micro-targeting novelty associated with the new information and communication technologies (ICTs) has led to cyberpolitics playing a central role in the political directions of nations. Knowing the consumption patterns of a group of consumers, or the reading patterns of a specific segment of voters in each region, it is possible to send micro-targeted messages to this portion of society only, rather than sending a generic message to a wide audience.

However, although similar Big Data resources and ICTs are used to reach the consumer and the voter, we intend to argue that the reaction of consumers is different from that of voters, making the job of campaign designers quite different from the job of cyberpolitics strategists. The reason is that the exploration of the latent polarization among voters, by means of the reinforcement of beliefs and prejudices, is more effective than the attempts to send a positive message about a certain commodity, as marketing campaigns do. It is important to make it clear that we are not suggesting that Big Data and ICTs are the cause of the political polarization occurring in many countries. What we are proposing is that they have been used to reinforce the latent polarization in society.

As an illustration of our hypotheses, we consider the effect of fake news on public opinion, which has sometimes been overrated or misinterpreted. To better formulate our argument, two scenarios can be investigated, where political or moral agents are influenced by the attempt to manipulate public opinion by means of fake news:

(i) In an ideal scenario, a moral agent seeks to ensure the truth of certain news, before reproducing or disseminating the news received. For this, he/she knows that it is important to verify the information source, checking its reliability.

(ii) In a scenario with Big Data and confirmation bias, understood as a tendency for a person to interpret information in a manner that confirms his or her prior beliefs, fake news is disseminated for the purpose of causing carefully designed political effects. In these cases, if this fake news meets the confirmation bias requirements, the source of reliability is not important to a significant part of the audience. In other words, the effectiveness of

fake news is only observed if previously endorsed systemic reasons are satisfied. In this circumstance, Big Data and ICT resources have purely instrumental roles, since they make it easier to obtain data to falsify reality, facilitating the task of spreading fake news on social networks. As illustrated in Figure 2, fake news works as confirmation bias, no matter how implausible or ridiculous certain information is in a given context.

An interesting variation of this scenario occurs when fake news has real content but is out of context or is jokingly presented. The case of deep fake of the authentic Nancy Pelosi video, where the speed of her voice was altered, to make her seem drunk, illustrates this situation in which manifestations of the audience confirm explicitly what they would like to hear/see, independent of facts[1].

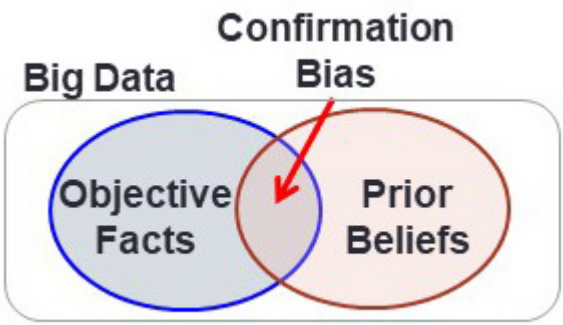

Figure 2. Big Data and confirmation bias.

In summary, when fake news acts as confirmation bias, what needs to be understood first is the willingness of the political actor to selectively accept only part of the information transmitted; what needs to be studied is how dispositional states had been produced in the political actors, reinforcing individual/collective tenacity even for systematic reasons. According to our hypothesis H1, the behaviour of people on social networks, where they are characterized as customers, is quite different from their behaviours in the roles of voter, political actor, or moral agent, since buyers of products or services might be open to experience unbiased novelties. This difference has strong implications for the type of explanatory modelling, as well as for the Big Data tools used to understand political action.

In the area of marketing, the microtargeting technique has been facilitated by the massive amounts of data generated by consumers. This allows the creation of specific messages targeted to segments of society, differentiating them from mass messages, which target the entire consumer market. Commercial marketing creators can now target with a positive

1https://www.washingtonpost.com/technology/2019/05/23/faked-pelosi-videos-slowed-make-her-appear-drunk-spread-across-social-media/

message only the specific portion of the market that is interested in a particular product or service. With the microtargeting technique, the emphasis of advertising campaigns is on the "quality" of consumers interested in the product, and not on the "quantity" of generic consumers. The enormous success of this type of advertising campaign in the USA and European countries shows that there is an excellent commercial return, with a significant increase in sales. In the commercial area, we now have the paradoxical situation that although the number of consumers involved in campaigns with microtargeting is lower, profits increase.

In the political sphere, on the other hand, the number of votes obtained by a candidate is the deciding factor in an election. It makes little sense to think about the "quality" of a voter, since each vote carries the same weight. However, with Big Data resources, cyberpolitics strategists can detect latent polarizations in the electorate and reinforce them with microtargeting. Among Trump voters, for example, there are many unemployed people who have lost their jobs due to globalization of the economy. At the same time, this segment presents strong polarization against immigrants and Chinese products, so specific messages to these victims of globalization may deepen the polarization of political opinion. Nonetheless, it would be a mistake to say that the usage of Big Data tools is the cause of polarization in society; rather, it reinforces latent dispositions. In other words, the misuse of Big Data analytics might reinforce and awaken latent dispositional tenacity in the moral agent, allowing the emergence of political polarization, which is the object of our Ethical analysis.

In all times, there have always been small groups of extremist or radical people who have been isolated from each other. With the ICT facilities, these isolated individuals can form small virtual communities, breaking the traditional isolation between them, while mutually radicalizing and reinforcing their political beliefs and conceptions. In situations of despair and apprehension, as in times of pandemics, the latent polarization in the electorate can be reinforced by the simple promise of a saving remedy, such as chloroquine to fight the SARS-CoV-2 virus. Like Trump, the Brazilian president has campaigned for the widespread use of chloroquine as a drug to prevent and combat the disease (Covid-19) caused by this virus. His followers immediately welcomed this miraculous solution with fervour, even though many of them knew there was no scientific proof of its effectiveness.

In short, the above examples illustrate how the decisions of the moral agent can be influenced by his/her previous beliefs. They also show that when designing an advertising campaign for the moral agent, it is more effective to rely on the reinforcement of latent polarizations, values, and previous beliefs, while in the case of the consumer it is more effective to send a positive message about a certain product or service. Therefore, it does not seem that Big Data and fake news provide a new logic of volume, velocity, and variety for cyberpolitics; the reinforcement of latent polarizations is not new and strategists from different societies and times knew how to do it very well.

The problem that needs to be investigated concerns the dynamics of dispositional states that structure the tendency of the political actor to selectively accept only part of the

information transmitted by Big Data tools. To be properly understood, this kind of multifaceted problem requires an interdisciplinary analysis, as suggested by Weaver (1948/2004), one of the defenders of the Complex Systems paradigm.

3. Big Data analytics and Complex Systems: An Applied Ethics perspective

We now turn to the analysis of problem P2: How can the Complex Systems paradigm help with the development of ethical practices in the use of Big Data analytics?

The Complex Systems paradigm has two main tendencies, grounded on (a) the theory of Complexity (Edgar Morin, 1996; Zoya & Aguirre, 2011), and (b) the Theory of Complex Systems (Mitchell & Newman, 2002; Ladyman & Lambert, 2012). Despite their different methodological approaches, both agree that complex systems are dynamic open structures whose functionality includes several intricate micro and macro dimensions. From this perspective, one fundamental aim of the Complex Systems analysis is to look for common informational patterns that unify properties of different domains, without restricting their functional diversity.

Among the main assumptions of the Complex Systems paradigm, we highlight the following principles:

(a) Self-organization: A spontaneous organization process that occurs between different communicating elements, without the presence of a central coordinator or an absolute controlling centre (Ashby, 1962; Debrun, 1996).

(b) Nonlinearity: A property of dynamic systems whose product, resulting from the interaction among its parts, can be greater (or less) than the sum of its constituent elements.

(c) Circular causation: The effect of a feedback process that brings about information in the system as its renewed cause.

(d) Emergence: The resulting interaction between elements at the microscopic level of dynamic systems that produces, at the macroscopic level, new properties manifested as informational patterns. These patterns, in turn, might organize and shape, in a feedback way, the behaviour of its constituent elements at the micro level (Haken, 2000; Gonzalez & Haselager, 2005; Mainzer, 1997; Bar-Yam, 1997; Lewin, 1994).

We understand that the above principles offer a useful conceptual framework for multiple-level analyses of ethical problems, taking into consideration that given the multiplicity of moral values, some ethical principles may be compromised. As pointed out by Allen (2012) there is no perfect solution in Ethics. Furthermore, there might be different ways of analysing emergent properties of the interactions, in several dimensions, between agents and environment. Hence, Big Data analytics might help with the anticipation of possible types of conduct and their likely future consequences, by modelling aspects of the rich diversity of human action.

As illustrated in Figure 3, a convenient way to model Complex Systems is by using graphs to form Complex Networks, with nodes representing, for example, non-identical political actors or moral agents, and edges indicating types of diverse interactions or behaviours in the macro and micro dimensions, resulting in non-trivial patterns of interactions. The functionality of a network is strictly related to its topology. Thus, for random networks, as the number of nodes increases, the average number of hops between two random nodes also increases. However, for scale-free networks, the number of nodes can increase, and the average number of hops may change very little, due to the existence of super-edges between hubs, which function analogously to large arteries in a living organism. This emerging property can affect the speed of the spread of a pandemic or rumours in a community structured in the form of a complex network of contacts.

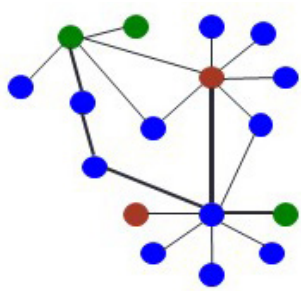

Figure 3. Complex Networks representing Complex Systems.

In accordance with Figure 3, human moral agents can be modelled as embodied systems with sensory and motor capabilities, situated in biological, historical, and social contexts, which in turn belong to a higher macro complex system that provides information for his/her actions, modelled by a scale-free network. In the case of a network of moral agents, Shannon's communication model, based on informational communication without concern for its semantic content, needs to be refined. Since the recipients of the message are now not passive, since they interpret the semantic content of messages, we need a model centred on the meaning of messages, dependent on the context, as illustrated in Figure 4.

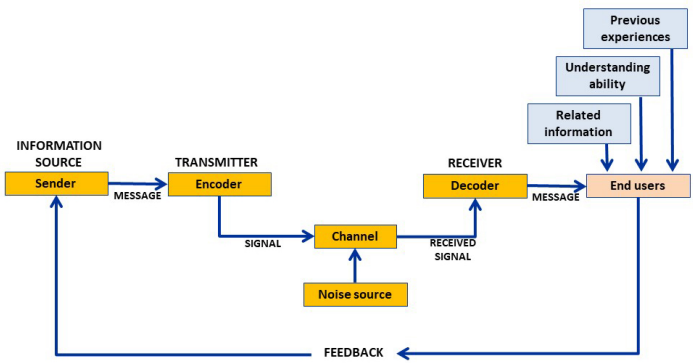

Figure 4. Meaning-centred model of communication.

A natural development of this view is that the ethical construct of the moral agent sketched here will incorporate adaptive and self-organized characteristics such as those expressed by the above principles (a)-(d). In our proposed model, these characteristics combine aspects of the ethical deontological, utilitarian, indigenous, and virtue systems, while showing the theoretical weakness of other aspects, resulting in a hybrid ethical system with certain deontological, utilitarian, virtue, indigenous, and pragmatic contributions.

A novelty of this proposed model is that the adaptive character of the moral agent implies the need to adapt his/her actions not only to the biological and social environments, but also to the historical changes of societies[2]. The hybrid Ethical model proposed here is grounded on the thesis that the understanding of moral foundations follows a law of moral "progress", even though the implementation of this moral "progress" is not linear, and it is not protected against historical setbacks. As indicated by Bobbio (2005: 28):

Let it be quite clear that scientific and technical progress is one thing, and moral progress is quite another. […] I shall limit myself to stating that, while there seems no doubt that scientific and technical progress is a reality, as up till now it has demonstrated the twin characteristics of continuity and irreversibility, it is much more difficult, and perhaps even risky, to deal with the question whether moral progress is a reality. There are at least two reasons for this. First, the concept of morality is itself problematic. And second, even if we were all in agreement on how to interpret morality, no one has yet discovered a yardstick by which to measure the moral progress of a nation, or indeed of all humanity, while on the other hand scientific and technical progress clearly can be measured in this way.

What is proposed here, from an Applied Ethics perspective, is not that there is the real implementation, in a law-like form, of a moral "progress", but that the "critical understanding" of humanity's moral dilemmas follows an evolutionary historical dynamic. Something similar seems to have happened to Walter Benjamin and his colleagues at the Frankfurt School, in pointing out the resounding failure of the Enlightenment human emancipatory project of reason and the predominance of instrumental reason, supported by scientificism. Now, the mere denunciation of the enlightenment's naïveté in this project shows a more elaborate understanding by its critics[3].

Adopting a critical pragmatic approach, in this proposed mixture of different ethical approaches it is assumed that different cultures adopt certain categorical imperatives, such as not lying or not killing, while accepting exceptional situations in which these same principles can be abandoned, such as when the lie does not become systemic, or when someone is killed due to self-defence. These examples illustrate a combination of

2 Kant (2008) argued that the exercise of reason could contribute decisively to eliminate wars between countries, but this prognosis was followed by world wars, atomic bombs, napalm dropped on peaceful rural populations, and indiscriminate massacres of defenceless civilians. Based on these facts, Norberto Bobbio (2005) defends the thesis that despite possible setbacks, the promulgation and recognition of Human Rights in 1948 is still a sign of progress in understanding the moral problem of humanity.

3 Considering the constant evolution of dynamic systems, there is clear inadequacy of the most orthodox form of Kantian categorical imperatives, as well as the Aristotelian virtue principles, because these are structured according to the hypothesis that wisdom is obtained by the accumulation of knowledge, and not by the ability to critically adapt to historically changing contexts, making decisions on the fly.

deontological ethics and utilitarianism, in which the ethics of virtue and temperance might apply in daily decisions, as well the indigenous ethics that emphasizes the search for the collective good (Chilisa, 2012). Furthermore, according to principle (e), of circular causation, the effect of a feedback process might bring about information in the system as its renewed cause, and the dynamics of the system may indicate, in certain contexts, that in its manifestation no right is absolute.

In this model, ethical deliberation would combine socially valuable duties (deontic ethics), but not in an absolute way; it advises the need for moderation depending on given circumstances (virtue ethics) and the predictable consequences of the adopted conduct (consequentialist ethics), promoting society's general good (indigenous ethics). But how can this hybrid combination of ethical approaches be applied in a functional way? How can the deliberation process be calibrated in the best way, considering the four adopted ethical perspectives? We believe that the Theory of Complex Systems can help in answering these two questions.

As pointed out, conflicts of interest and ethical dilemmas might occur as a result of various types of interactions between moral agents, given that they belong to complex social systems composed of various types of interconnected organizations and networks. These systems are dynamic, because the agents that make up the entangled formal and informal organizations might renew and update, in a ***nonlinear*** way, the patterns of conduct that have been created as a result of their interactions (principle (b)). ***Continuous feedback*** helps to preserve the stability that allows the system to evolve, preserving traits of its identity. As pointed out by Parsons (2010), organizations can result from tacit or explicit agreements, with a greater or lesser degree of adherence on the part of their members. They can incorporate hierarchies, with different roles for their members, and gradually create and adopt forms of self-organization and control.

From this perspective, the core component of ***self-organization***, the principle (a) of social Complex Systems, would be the creation, recognition, and adoption of moral rules and values, allowing the general awareness of what is socially relevant and should guide collective conduct. However, due to the diversity and heterogeneity of social systems, new

emergent properties may occur in accordance with principle (d), frequently generating conflicts among established values and interests.

One advantage of the proposed Complex Systems approach to applied ethics, in the era of Big Data, is that it allows analyses of ethical conflicts between interests and values, at various scales and from different theoretical perspectives. Depending on the specific case, moral deliberation can, in theory, involve at least three stages. Firstly, the principles of duty would help moral agents to establish a range of practical possibilities for action in different contexts. Such principles could function as regulative ideas (Kant, 1922), that is, as heuristic fictions that would act as a means to guide empirical knowledge and achieve appropriate deliberations. In a second step, from the range of context-dependent possibilities delimited by regulatory principles, the ethics of virtues would help to delimit an even narrower range

of possibilities for action, by allowing the detection of more extreme positions contrary to the principle of moderation. Finally, consequentialist ethics would make it possible to assess different types of conduct previously outlined by considering various possible consequences for the common good, according to the proposals of indigenous ethics, at different timescales.

The proposed hybrid ethical model incorporates the following steps:

(a) A moral agent faces an anomalous practical conflict.

(b) Several moral principles are considered, which, if followed, would lead to different lines of action.

(c) Moderate and extreme lines of action are considered.

(d) A pattern of actions is selected whose foreseeable consequences, at different time scales, are fitted to the common good and the preservation of the dignity of all.

If the pattern of actions adopted is appropriate for dealing with an ethical conflict, then moral agents facing similar ethical conflicts can incorporate it, creating a habit. Otherwise, as a result of the self-organized social dynamics, other patterns of action may be the objects of the hybrid ethical reasoning.

An advantage of using Big Data analytics in the dynamics of opinion and action is that the combination of data and models facilitates the difficult and important task of making predictions. With realistic predictions, it is possible to anticipate actions, in order to establish less inequitable social policies aimed at the common good of the community, consequently avoiding or reducing moral conflicts. However, when these resources are in the hands of authoritarian governments, they can transform the promise of a future with distributive justice into an oppressive political dystopia. With Big Data analytics, the potential for making good predictions is greatly enhanced, as well as the ease of deepening latent polarizations by means of persuasion methods.

In summary, we have sketched a model of Applied Ethics grounded on assumptions of the Complex Systems paradigm, claiming that Big Data resources could help with the analysis of moral conflicts. To conclude, we consider the development of possible ethical strategies for evaluation of the use of Big Data analytics.

4. Big Data: Ethical suggestions for sustainable research funding

After presenting the main characteristics of Big Data analytics (volume, variety, velocity, veracity, variability, and value), we highlighted differences in the successes of these techniques in influencing social agents, seen as consumers or as moral/political agents. We argued that advertising techniques that use Big Data analytics are quite successful in influencing the consumption of a product, because this involves a simple purchase and sales are related to the extent to which a commodity is praised. On the other hand, when Big Data techniques are used to convince individuals to vote for a particular candidate,

these techniques alone do not seem to be sufficient to shape voters' opinions or cause political polarization. They need to target previous dispositions, prejudices, or well-rooted beliefs, so that a specific content (regardless of whether it is true or false) reaches a certain layer of the electorate and reverberates or goes viral.

To address the social impact of Big Data techniques, we emphasize the complex nature of social systems, which underlies Big Data models but is not properly taken into account by ethical theories alone, in their analyses of conflicts and dilemmas, considering: (1) the self-organized nature of many social structures; (2) the emergent properties in the different layers of social systems that are not reducible to the quantity of agents alone; (3) the nonlinearity of social interactions, in the sense that social interactions can promote novelties not easily predictable from individual actions; and (4) the role of feedback processes in reinforcing or abandoning certain patterns of conduct.

Given the complex nature of the problems posed by Big Data analytics, we propose that in the case of research funding criteria, a hybrid ethical perspective may be most appropriate. Such a perspective could address the complex social issues arising from the massive use of these techniques, considering the social duties and values at stake, a range of possible moderate to extreme patterns of conduct, the medium and long term consequences of possible conducts under evaluation, and, most importantly, the common good.

The hybrid approach proposed here re-evaluates a broad form of ethical reasoning, in contrast to the mere instrumental reason underlying the use of Big Data analytics for private interests, the goal of which is to reduce moral agents to consumers. This hybrid ethical moral reasoning allows us to emphasize the limits of the current models of ethical evaluation of research projects, which are based on the maxim "do no harm". It is no longer sufficient to consider only the possible negative consequences of a research project, not least because long-term negative consequences are very often unpredictable. It is also necessary to evaluate how the research might contribute to the common good and promotion of the dignity of all.

5. Provisional conclusions

We have proposed reasons for a negative answer to the leading question of this paper - whether everything that is technically possible is ethically defensible. There are many examples of technological achievements that are difficult to justify ethically: nuclear, chemical, and biological weapons of mass destruction; creation of viruses that spread damage to computer systems; fake news and deep fake techniques that cause political confusion and attack the dignity of individuals; among others. Ethical justifications for this position are not simple, but some provisional justifications in the context of Big Data can be helpful.

Computational techniques are strongly based on rational thinking, while for technical research in the era of Big Data analytics to be ethically defensible, limits need to be

established, especially with respect to the power of large research financing companies that encourage targeted research that might benefit their businesses. Thus, for example, the pharmaceutical industry tends to encourage research that minimizes consideration of the side effects of new drugs; agribusiness tends to finance research that underestimates the harmful effects of pesticides; and the livestock industry usually funds research suggesting that the treatment of animals before being taken to the slaughterhouse does not cause suffering. To restrain the power of these major funders of targeted research, it is no longer enough to adopt the Montesquieu maxim that power must limit power (that each of three powers limits the powers of the other two). It is no longer enough to establish limits on private funding for research carried out at public universities, or to just adopt the ethical maxim "do no harm", when evaluating potential research projects.

To conclude provisionally, we would like to propose the following ethical criteria for sustainable research funding in the Big Data era:

I. Big Data research should respect sustainable diversity in natural, cultural, political, and economic spheres. Ensuring sustainable diversity means fostering intercultural dialogue, respect for gender and race issues, and replacing the concept of linear economy (buy-use-waste) with that of circular economy (reuse of natural resources).

II. Big Data research should offer the possibility for moral agents to establish a relationship that might promote the understanding of individual/collective autonomy and social wellbeing.

III. Big Data research should collaborate with the development of a just society, or putting it another way, building a just society requires recognizing that there is no neutral distribution of the resources available in the Big Data digital world. Therefore, regulatory distributive norms (such as net neutrality to ensure that all content flowing through the Internet must be treated equally) need to be created by society itself, in a self-organized way.

IV. Big Data researchers should assume prospective responsibility by; "(i) minimising the probability and degree of anticipated regret of past actions before they occur; and (ii) being circumspect about our moral strengths and weaknesses, allowing for the near opacity of our motives and the possibility of self-deception." (Lockwood, 2015: 11)

In the context of Big Data analytics, there is the risk that hypotheses to be tested may be directed to bring benefits only to large research financing companies. To avoid such occurrences and the distortion of scientific knowledge by the adoption of unacceptable guiding hypotheses, it is necessary, due to ethical concerns, to limit technical reason in the service of large private companies. Reason must prevail to produce ethically defensible scientific research, since it is by means of reason that morality advances.

Ideally, ethical, aesthetical, social, cultural, political, ecological, and economic contexts should be integrated. As stressed by Pauleen, David & Ali (2015), the understanding of the interwoven nature of these areas is fundamental for the effective use of data, information,

and knowledge. The common good of the community should always guide scientific research and innovation, to prevent the scenario in which a technocracy (effectively, controlling computers) concludes that a significant part of humanity is a useless burden.

In the context of intelligent systems operating in conjunction with Big Data, a complicating factor in the problem of machine control is, according to Wiener (1948/1996), related to timescales: As humans are generally slower than machines, the coordination between them can bring about unpredictable difficulties.

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8. *Political Economy of Cyberspace, Data & Technology*

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Abstract

Society has been undergoing the process of shifting from analogue to digital and from physical space to virtual space for quite some time. With this shift, society has seen major changes in its foundational make up, from the day-to-day interactions among people and institutions, to the way goods, services, and information are produced and consumed, used and manipulated. On the one hand, the space these interactions and transactions take place is clearly a non-physical space, the virtual space, or space of the unknown. On the other hand, the ever-increasing production of data, or immaterial goods, has forced a revaluation of the global economic and production system. Michael Betancourt, in his book, "The Critique of Digital Capitalism", refers to this as production without consumption. Never-ending amounts of data and information are being produced on a daily basis (immaterial goods) and are consumed at an astounding rate. The way in which this data and information is created, used, manipulated, bought, sold, and recreated, specifically in regards to its social and political implications, will be the focus of this paper. This paper will also look at the increasing impact technology, data, and digital capitalism has in the political and social decision making process in todays' world. How have political processes changed, for better or worse, because of these new technologies? Are they in fact more inclusive? Is the promise that more people have a voice because of digital media actually true? Does or can this voice lead to meaningful social or political change? While advances in media and technology once promised voice to those without, or a space for dialogue, which once was not present, the reality is that this space, and voice, is possibly being manipulated for not only economic gain, but also social and political gain.

1. Political Economy

The terms politics and economy have long been directly associated with the control, manipulation and guiding of communities, societies, cities, regions and countries. Governments and rulers have always attempted to maintain social order through means of persuasion, influence, reward, and when necessary, force and violence. This relationship is more or less straight forward. Those in power will use the means at their disposal to stay in power. Those who are not in power will either acquiesce, going about their daily lives, or attempt to fight back, contesting those in power. Different styles of governing could potentially produce different results. Different time periods could see different styles as more effective. What didn't change, however, was this more or less binary relationship with those in power and those not in power.

Adding the institution of the economy into this relationship completely changes what was once a fairly simple dynamic. All economic models, whether capitalist leaning or socialist

or communist in nature, are based on a single overarching concept, scarcity. What is often overlooked when it comes to this foundation of economies as we know them, is that in fact it is more than just the presence of scarce natural resources. Scarcity, and likely many economic systems, would not exist if the never ending human desire was not also included in this equation. While many agree that natural, or physical, resources do have a limit to them, the acceptance of humans' inherent greed is often overlooked, and could be seen as an important area for debate or discussion. However, given the current state of humanity and the world, the relevance of this debate may have already expired.

What is still relevant, however, is the nature of capitalism and its relationship to society, government and the future of the world order. Capitalism has, and always has, shown a direct relationship between two terms, humans and nature. As pointed out by Karl Polanyi in his narrative of the great transformation, the translation of nature into commodity, the early process of capitalism, can be seen in three mental inventions. First, human life could be subordinated to market dynamics. This allows it to be redefined as labour that can be bought and sold. Second, physical nature can be transformed into market form as land or real estate. Lastly, these exchanges, or translations, could be redefined as money. (Zuboff, 2019: 88-9). This, is more or less the definition of industrial capitalism. A capitalism whose goal was the exploitation of nature for profit. This goal of profit for companies and governments was justified with the money given to humans for their labour, and the 'convenience' provided by the goods being produced. As happened with the acceptance of the conditions of scarcity, society seamlessly accepted this new 'institution' as necessary for the development and progress of society, while at the same time being turned into a commodity necessary for the extraction of raw materials from nature.

There are surely countless achievements that can be attributed to the period of industrial capitalism. These achievements should not be taken for granted, as the hyper modern lives we live today would not be possible without these human inventions. The focus here though, is again not the achievements of industrial capitalism or human labour. Rather we want to shift our focus to the capitalism of the present. The capitalism of today still centres around the two key terms from industrial capitalism, humans and nature. However, whereas with industrial capitalism humans were necessary for the manipulation of physical nature, present day capitalism has seen the dynamics of this relationship dramatically changed. This present day capitalism has been referred to and called many things, information capitalism, digital capitalism, cognitive capitalism, data capitalism, surveillance capitalism, or even behavioural capitalism. Each of these terms, however, contain important aspects to the capitalism that can be seen in society today. The most encompassing of these terms may be surveillance capitalism, which will be the term used going forward to analyse the capitalism seen today.

Surveillance capitalism, a term possibly coined by Shoshana Zuboff, but also possibly others, is the attempt to understand the human and nature dynamic of capitalism. Zuboff (2019) notes,

"Industrial capitalism depended upon the exploitation and control of nature, with catastrophic consequences that we only now recognize. Surveillance capitalism…depends instead upon the exploitation and control of human nature." (Zuboff, p. 470).

2. Technology

The exploitation of nature was always done with technology. New technological inventions meant more efficient extraction of the raw materials needed to continue producing. Technology has, more or less, always been synonymous with development, progress, production, and by default, economy and capitalism. The development of technology, not only the physical technology of the past, but equally or perhaps more importantly, digital technology, is what has led us to the point of surveillance capitalism we face today. The overall goal of capitalism, has not changed. Companies aim to produce 'things' that consumers will consume. This creates exchange value. People work, earn money, and spend this money on 'things' being produced. Influencing the consumer to purchase these goods has always been vital to the success of companies. Access to consumers in their daily lives, private lives, homes, and workplaces can be very beneficial when trying to influence decisions regarding purchases. Long past are the days of radio advertisements, television commercials targeting people with their products, or full page newspaper ads with the latest greatest consumer good. Computers, the Internet, and the plethora of smart devices have forever changed the battleground of consumer persuasion. The institution of surveillance capitalism utilizes all of these technologies to create and maintain a dominant position in society, a position which has ultimate control over what is produced, consumed, and any 'surplus' that is created as a by-product. As Zuboff (2019) points out, however, surveillance capitalism itself is not a technology, rather, "…it is a logic that imbues technology and commands it into action…technology is not and can never can be a thing in itself, isolated from economics and society." (p. 15).

Surveillance capitalism may not be A technology, but technology may be surveillance capitalism. The big players in the economy and system of capitalism have shifted from those using technology to extract materials from nature, to those using technology to feed the machine of surveillance capitalism. The raw materials that were once necessary for market domination are no longer coveted in the same way. The earth and nature are no longer the forces determining the superiority, or inferiority, of any given company or nation. As Zuboff (2019) points out,

"The aim now is not to dominate nature but rather human nature. The focus has shifted from machines that overcome the limits of bodies to machines that modify the behaviour of individuals, groups, and populations in the service of market objectives. This global installation of instrumentarian power overcomes and replaces the human inwardness that feeds the will to will and gives sustenance to our voices in the first person, incapacitating democracy at its roots." (p. 515).

Technology, and its use by surveillance capitalists, has made it such that consumers have

become the producers. Consumers produce the information, the data, that drives the engines of this machine. Every time we use a computer, smart device, or any other item connected to the Internet, data is produced, stored, analysed and utilized to enhance the efficiency of the machine.

The data being collected can essentially be seen as behaviour, since it is data depicting decisions made by humans in their new social environment. Decisions about what to read, what to wear, what to watch, eat, do, etc., are all now shared and given voluntarily by the majority of society. Using technology and services from the major technology companies, as Amy Webb calls the G-Mafia in the west or BAT in China, has become a basic necessity in order to live the life that exists in the world today. This 'inevitability' is how we are raised, what we are taught to believe as truth, so much so that it can be compared to the ultimate 'existential narcotic' (Zuboff, 2019, p. 516).

Access to these technologies does not come without cost, however. Having the financial ability to be able to purchase the technology required to access the 'super' modern life of the internet and digital lifestyle is certainly a requirement. But, leaving aside all the updates, new models of device, etc., this purchase is a one-time cost. The device is purchased and that is it. But, in order to use the device, to make it functional in the world of surveillance capitalism, there is a cost that is never-ending. Each account that is created, each website that is visited, app downloaded, purchase made, location shared, etc., all produce the data that is vital to keeping the surveillance capitalism machine running. Much of this information was once considered private. Physically travelling to places was almost never tracked, mapped and catalogued. In the age of the digital and the Internet, all of this 'travel' and all the things we do along the way are tracked, mapped and catalogued. For the most part, however, this is also seen as inevitable.

"The opportunity for 'my life, my way, at a price I can afford' was the human promise that quickly lodged at the very heart of the commercial digital project…" (Zuboff, 2019, p. 54).

This 'sacrifice' of personal information is seen as necessary if one wants to live the modern, technologically driven life. In industrial times maybe the sacrifice was a forest in order to build a highway, or a river to build a dam. This is a significant change in the economic relationship taking place in our everyday lives. These roads, dams, water or electric lines, or other physical infrastructure things were and are finite. There is a limited, scarce, space in the world in which to build these things. A company in the business of building dams on rivers will, one day, run out of space on the rivers in the world to build these dams.

The shift to the surveillance economy model sees this problem of finite resources go away. Michael Betancourt (2015), in his book "The Critique of Digital Capitalism", refers to this production of digital information or data as infinite, or immortal (p. 37). The production of the new 'raw' material necessary to drive the engine of the new economy is infinite, scarcity does not exist. This 'discovery' completely shifted the centre of the control of the economy to Silicon Valley and the now infamous G-Mafia companies. As society was being forced, coerced, and guided by the necessity of new technologies for daily living, the amount of

data being generated quickly began to be seen. Again here, we can see the 'inevitability' factor/excuse being used by those wanting/needing to use these technologies or devices. Zuboff (2019) notes,

"…neoliberal ideology and policy also provided the habitat in which surveillance capitalism could flourish. This ideology and its practical implementation bends second-modernity individuals to the draconian quid pro quo at the heart of surveillance capitalism's logic of accumulation, in which information and connection are ransomed for the lucrative behavioural data that fund its immense growth and profits"(p. 54).

The use of the term behavioural data here is not to be taken lightly. While much of society may be aware of companies like Google, Facebook, Microsoft, or any other of the G-Mafia companies collecting data like location, search history, even friends or contacts, the turning of this data into behaviour may be somewhat of a new phenomenon, at least for the general public. Sure, we have all received targeted ads based on things we've searched for, said, or talked with friends about. Zuboff (2019) continues,

"With Google's unique access to behavioural data, it would now be possible to know what a particular individual in a particular time and place was thinking, feeling and doing. That this no longer seems astonishing to us, or perhaps even worthy of note, is evidence of the profound psychic numbing that has inured us to a bold and unprecedented shift in capitalist methods" (p. 78).

What is more interesting to note here, however, is the inclusion of feeling, and eventually doing, into the equation. No longer are we simply receiving advertisements based on something we searched for. Now, we are receiving targeted data based on what we are thinking *and* feeling, and all the previous decisions we have made in similar situations and circumstances. While surveillance capitalism and surveillance capitalist corporations are driven by consumer generated data, one of the main ways this data has become infinite is the ability to predict and guide the behaviour of these same consumers. When the predictions are incorrect, the consumers unknowingly correct them by making alternate decisions. When Google guides us in the wrong direction, we correct this without thinking twice.

The old labour-raw material-producer-product-consumer model is completely outdated and unnecessary. What we see now is consumers producing raw material, no longer at a cost to the company, but at a cost to the consumer. Companies then take this raw material and sell it back to the consumer in terms of suggestions, advertisements, nudges, or any other form of digital persuasion. By consuming this resold data, consumers begin the cycle once again, either generating new raw material for the companies, or correcting any imperfections in the original set of raw material.

This data, already immense in size and scope, naturally grows with the 'normal' actions in ones daily life. Never before in history have we seen the raw material input for a multi-billion dollar industry be 1) infinitely producing and 2) a direct look into the daily lives of the people.

The political landscape of surveillance capitalism begins with the so called 'big nine' (Webb, 2019). The G-Mafia (Google, Microsoft, Amazon, Facebook, IBM and Apple) have a corner on the market of behavioural data for most of the world, except China. China has BAT (Baidu, Tencent, Alibaba), which are the leading Chinese super-tech companies. While these companies are all very similar in terms of what they make, there is one key difference, and that is the political situation facing each group.

The Chinese government has a clear policy of developing technologically, specifically in the area of AI. (AI being the real engine behind surveillance capitalism) The Chinese government announced, in 2017, a plan to become the global leader in AI by the year 2030, with a domestic industry valued at over $150 billion (Mozur, 2017). The industry here is very much state driven. Surveillance capitalism and the development of AI is incentivized and utilized by the Chinese government. The government in China has created a system to evaluate all of the behavioural data collected by the Chinese big three. This 'Social Credit Score' system evaluates all of the data available for all people, giving them a social score based on 'desirable' characteristics (Webb, 2019). This score can impact things like travel, job opportunities, financial decisions, and even enrolment at certain schools. Once again, all of the data collected for the calculation of this score is voluntary, or inevitable, if one wants to participate in the social world of the future. China is seemingly creating a system of complete social manufacturing, a system that puts the machine of surveillance capitalism at the centre of the power structure.

Generally speaking, the rest of the world falls under the control of the remaining big six. The biggest difference between the big Chinese three and the big six is the relationship with the political establishment. Where research and development in China is very much state driven, for the big six the relationship is the opposite. Policies, research and development, and industry growth are not state sponsored or state driven in the big six. This is not to say that these companies are not political. In fact, it is just the opposite. We have seen recently how the development of AI can be used to try and influence the outcome of elections or votes. This, however, is still a very different dynamic than in the Chinese situation. The G-Mafia are being used to try to influence the outcome of the electoral process whereas the big 3 in China are more directly used by the government to maintain social order. In terms of the G-Mafia, we may say that they are first and foremost profit driven. Research and development needs to turn into sales and profits. That is the nature of their business model. The Chinese big 3 have more of a two-pronged business model. One of these is certainly profit driven, but they also have social stability as a driving force. This significantly changes the landscape in terms of the development of new technologies and the use of data and surveillance capitalism for political and social gain.

Google, Microsoft, Amazon, and the others are not doing anything less with regards to data collection, surplus extraction and revenue generation than their Chinese counterparts. The data is certainly there, should any of the big six choose to rename their 'services', calling them Social Credit System. Because in reality, it really isn't that different. The Chinese model

is probably more efficient, as collaboration is more likely under a national development plan. The big six compete amongst one another to develop the next method of behaviour tracking. All the while, we, the people of the world, continue to make this possible simply by living a 'normal' life. All of the decisions, thoughts, and ideas that happen in cyberspace generate a more precise definition of our digital self. While our natural instinct may be to think that the Internet increases our freedoms and access to information, it may in fact be the opposite.

We could be, as has been mentioned, living in our own created realities. Realities that are so well monitored and documented, they become nearly reproduceable. We are, in a sense, building a giant cyber prison because it is 'inevitable'. We create the social systems which are controlled by either government or privately owned AI devices, programs and algorithms. Every day of our lives, as we continue to use devices and platforms, generating never-ending sets of data, reinforcing this digital prison, we are making it stronger, more dynamic, more all-knowing, and more impossible to imagine escape.

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9. *Contemplating the digital revolution*

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Abstract

The current revolution - product of the development of digital communication network systems - could appear as one of the 'periodic accelerations of history' that occur with the introduction of a new technology that ends up projecting reality in a new virtuality in terms of expectations and horizons. A situation in which a daily experience of virtuality is called into question to attest to the same reality. In fact, it is more than a periodic change caused by a new technology. The Internet has become a metamedium: the constantly evolving digital language penetrates and colonizes traditional means of communication that tend not to change. Virtualization, which has affected every area of coexistence from side to side, seems to be the essence of the current revolution. Before taking a position of condemnation or fatalistic acceptance, Pierre Levy tried to investigate its core, identified in the shift from being to questioning, in a 'heterogenesis of the human' as a movement of becoming other. Below the fixed and immediate presence, the virtual allows us to find further meanings, also questioning the identity classically understood with its determinations and exclusions. Virtualization, therefore, would not consist in either disincarnation or dematerialization, but rather in a 'change of identity, passage from a specific solution to a general problem or as a transformation of a particular and circumscribed activity into delocalized, desynchronized, collectivized functioning'. Thinking about this revolution means trying to understand it in order to humanize it without necessarily suffering it. This involves identifying the risks that are hidden in the metamorphosis initiated by the network era. Virtualization dynamics are neither neutral nor peaceful: heterogenesis can generate alienation, and sharing can sometimes produce appropriation and exclusion. Closing territories and identities is the fatal mistake to be avoided in the face of deterritorialization and the virtual as the new home of humanity. A mistake that can trigger, like the inelasticity of land plates long blocked in the case of earthquakes, a brutal violence.

What characterizes the contemporary technological paradigm is the fact that information is its raw material with effects of great pervasiveness perceived in every aspect of individual and collective existence. Internet is a communicative fabric that we do not limit ourselves to using for a specific purpose and time, but with which we live relationships in the broadest sense. With the internet age, a constellation has opened up in which global communication mediated by computers (CMC) has created interpersonal social networks characterized by multiple weak links in which information is disseminated in real time, at low cost, with a strengthening of the personal aspects of communication. The problem is not to oppose virtual to real, but to grasp the implications of the culture of real virtuality, as Castells says. That is, of a system in which reality itself, as a 'symbolic material existence' of individuals, is entirely immersed and captured in a scenario of images in which appearances, beyond the screen used to communicate them, become experience. It is in this perspective that we talked about metamedium to indicate how the digital world keeps together in a timeless hypertext every cultural expression, whether past, present or future, building a new symbolic environment that the sociologist

compares to the visionary Aleph described by Borges. The bright spot that unveils the inconceivable universe in its wonderful and terrible features and transforms everything into endless things.

0. Introduction

In this chapter, I argue that while the current technological revolution may look like one of the periodic accelerations of history that occur with the introduction of new technology, in fact, it is more than that. The Internet has become a "meta-medium" where the constantly evolving digital language penetrates and colonizes traditional means of communication. What characterizes the contemporary technological paradigm is the fact that information is raw material with pervasive effects that can be perceived in every aspect of individual and collective existence. This change, made possible by the unstoppable development of information technology, is occurring in several phases, but the most significant aspect is certainly the global and widespread expansion of the Internet. This is opening up horizons of reflection that allow for questioning the power of images; the relationship between facts and representations; the manipulation of news and question of post-truth; the link between emotions, knowledge and politics; and the languages of digital violence. The technification of lives, which began in the twentieth century, today has the appearance of a full mediatization and imagification that crosses all aspects of human existence. In this chapter, I will try to provide some possible ways of understanding the digital revolution in philosophical terms. The aim is not to choose one theory over another but to underline that diagnosing a complex and epochal phenomenon requires several analytical tools. A basic line between the considered philosophies and theories concerns the categories of space and time, at the subjective and even objective levels, and consequently the relationship between human beings and the world. This change inevitably has a conspicuous political consequence in terms of the immediacy or demedialization of the relationship between power and citizens.

1. Understanding the digital revolution

The word revolution was originally defined as a regular and immutable astral movement and its emergence in political language was as the restoration of a legitimate order. When, in the course of events, the protagonists discern the impossibility of restoring the previous state, because what is happening paradoxically escapes the hands of its initiators, that event assumes an interruptive meaning, typical of revolutions. "The fact that the word 'revolution' meant originally restoration, hence something which to us is its very opposite, is not a mere oddity of semantics", according to Hannah Arendt (1990: 42). Change often begins with the intention of restoring ancient freedoms. "When newness had reached the market-place, it became the beginning of a new story, started – though unwittingly – by acting men, to be enacted further, to be augmented and spun out by their posterity" (Arendt, 1990: 47). However, in the term's passage from astronomy to political language, one connotation remained evident: irresistibility. This refers to the "fact that the revolving

motion of the stars follows a preordained path and is removed from all influence of human power" (Arendt, 1990: 47). The irresistible process is often expressed by revolutionaries through different metaphors, such as the torrent or current, to indicate a force greater than human beings.

This reference to Arendt's concept of revolution is useful for underlining how its character of a new beginning, of real caesura in space and time, appears only during its development, in particular when the unexpected appears. Every revolution, whether political or gnoseological, fundamentally questions the relationship between human beings and the world. The change that has been affecting humanity in the last few decades appears to be a real revolution in communication in the widest sense. Experts in political theory know that the public sphere, the soul of representative democracies, relies on public communication. The digital revolution seems to hybridize the boundaries between public and private communication, making the use of the traditional concept of the public sphere antiquated, even if only in ideal terms.

The digital revolution represents a proper era despite the many underestimates by some spheres of knowledge, not least the political one. It is difficult to understand the metamorphosis of parties, leadership and electoral trends without focusing on the context in which such changes occur. Individuals are experiencing a profound change of perspective, an authentic cognitive, communicative, political and existential revolution, because it affects how they relate to the world in which they live, even if they are not fully aware of this crucial transition. Digital technology is a revolution that not only concerns a country or a group of people but is also global: its scenario is a globalized world that penetrates all aspects of human existence. To understand this change of scenery, an individual should be able to suspend time and space and imagine returning to the contemporary world after an absence of 10 or 15 years, as in the clever movie Goodbye Lenin, where a son's love for his mother leads him to stage an old, fading world to avoid the shock of the new one.

As such, a revolution constitutes as a dividing line between a before and an after, when the masses adopt a change in perspective. It is not crucial to date the beginning of this metamorphosis but to show its effects when it penetrates everyone's life at a global level – in the tiny grain of individuality, as Michel Foucault would say, in the way people think, see and feel. Looking at the great historical periods and cognitive revolutions, certainly modernity, with its anthropocentrism, marks a profound change in the cognitive observation point, from Descartes to Kant. It is the human being – man, white, Christian, owner – who inscribes the world in its categories of thought and its space–time coordinates.

Who can say with certainty that the human being is still the centre of attention? What is the contemporary core of the cognitive process? I ask this because the digital revolution has penetrated the imagination, captured our biometric and sociometric data, captured desires and fears and created capital from archiving, transmitting, reproducing and monetizing. Consequently, it has induced new desires and fears, not always at a conscious level. South Korean philosopher Byung-Chul Han (2017) speaks of "dataism" as a second, only apparent, Enlightenment in which data are at risk of being absolutized, thus becoming a

new ideology. Dataism refers to the ongoing recording of data derived from individuals with their consent: all human activities are measurable and recordable, and each of us helps this extraction of information through a form of self-exploitation. Dataism is a technique of self-control and self-monitoring with connections to biopolitics understood as an increment of life in which the "I" is counted. Counting does not mean telling or narrating itself. Data, which is a precious resource for the companies that dominate it, has political relevance. "Big Data is a Big Deal", states Han (2017).

The marketing of self-accounting, amplified by the union between neoliberalism and digital, has as a counterpart a progressive immunization from others. The denial and expulsion of otherness is a recurrent theme in Han's (2018) most recent reflections. In this case, otherness indicates extraneousness; that is, whomever is deemed different stops or slows down the movement of information and capital (Han, 2018). For this reason, the greater the similarity between people, the greater the production. The logic of capitalism needs all individuals, including tourists, to be equal. Neoliberalism would not work if people were different. Thus, the other as a secret, temptation and desire tends to disappear. The negativity of the other gives way to the positivity of the same. According to Han, this is a pathological aspect of contemporary communities: the proliferation of the same gradually makes the differences disappear. Rather than prohibitions or interdictions, it is over-communication and over-consumption that exclude otherness. The fact that interconnection and total communication are vehicles for experiencing each other is only an impression.

The terror of the Same affects all areas of life today. One travels everything, yet does not experience anything. One catches sight of everything, yet reaches no insight. One accumulates information and data, yet does not attain knowledge. One lusts after adventures and stimulation, but always remains the same. One accumulates online 'friends' and 'followers', yet never encounters another person. Social media constitutes an absolute zero grade of social. (Han, 2018: 3).

To recover the differences, Han provocatively suggests a return to the inner animal, which unfortunately does not consume and does not communicate, without being able to indicate concrete solutions. His reflection on the contemporary world focuses on a dark diagnosis of a radically conformist era that risks imploding because it is at the limit of its capabilities.

2. The digital revolution from a philosophical perspective

Although the current revolution – the consequence of the development of digital communication network systems – may seem like one of the "periodic accelerations in history" that occur following the introduction of a new technology, in fact, it is more than that. The Internet has become a meta-medium: the ever-evolving digital language penetrates

and colonizes traditional means of communication that tend to remain the same. In one of the most innovatory reflections on virtual, Pierre Lévy (1998) detaches himself from the opposition between the real and the virtual, if the former indicates the concrete presence of an object and the latter a deferred and illusory presence. Intended instead as a node of tendencies that are proper to an entity or a situation, the virtual, rather than the real, seems to call for actualization – that is, the form assumed by a dynamic configuration of forces and purposes. Virtualization, then, appears to be a different movement from actualization because it transforms the topicality of a particular case – a solution – into a problematic field. The dynamics of virtualization do not cancel space and time; they do not produce simple accelerations of processes already underway but create qualitatively new spaces and times. The boundaries of times and places are no longer obvious and clearly delimited.

Virtualization affects every area of coexistence and seems to be the essence of the digital revolution. Before taking a position of condemnation or fatalistic acceptance, Lévy (1998) investigates its core, identified in a "heterogenesis of the human" as a movement of becoming other. Below the fixed and immediate presence, the virtual allows for uncovering further meanings and also for questioning the classically understood identity with its determinations and exclusions. Virtualization, therefore, would consist neither in disincarnation nor in dematerialization but in a change of identity, passing from a specific solution to a general problem through delocalization and desynchronization (Lévy 1998). In this sense, the adventure of human history presents traits of virtualization as a movement through which our species has created itself and continues to modify its characters.

Moreover, according to Lévy (1998), in addition to deterritorialization, virtualization is characterized by a reversal of the internal and external, by an externalization of private elements – evident in social communication – and by an individual introjection of the public elements. The philosophy of the virtual conceptualizes this problematic essence, crossed by trends and forces that are often resolved in actualization, and traces its fertile cavity. Philosophical understanding is a way to humanize it without necessarily suffering it. The French philosopher sees the hidden risks in the metamorphosis initiated by the net era and invites making artistic care prevail in both political action and economic practice. The dynamics of virtualization are neither neutral nor peaceful. Closing oneself within threatened territories and identities is, according to Lévy, the fatal mistake to avoid in the face of deterritorialization and the virtual as the new home of the human.

In addition to reflections on virtual reality, an important theoretical contribution to thinking about the digital world comes from the writings of sociologist Manuel Castells. According to Castells (1996), what characterizes the contemporary technological paradigm is the fact that information is raw material with effects that pervade every aspect of individual and collective existence. The Internet is a communicative fabric that individuals not only use for a specific purpose and time but with which they live their relationships. The problem is not opposing the virtual to the real but grasping the implications of the culture of real virtuality – that is, a system in which reality itself, as the "symbolic material existence" of individuals, is entirely immersed and captured in a scenario of images in

which appearances, beyond the screen used to communicate them, become experience (Castells, 1996). From this perspective, the meta-medium indicates how the digital world holds together, in a timeless hypertext, every cultural expression – past, present or future – building a new symbolic environment that the sociologist compares to the visionary Aleph described by Jorge Luis Borges.

In addition to virtual philosophy and reflection on reticular information, the philosophy of technology offers a third possible interpretation to put the digital revolution into perspective. The latter has a long tradition, which I will not discuss in this chapter. A less frequent declination of the philosophy of technology, but particularly topical, is the pioneering analysis of the media and the image as a paradigm of the twenty-first century that today occupies a central place in reflections on the digital revolution. Presented as the effect of the domination of technology over the human condition, the media critique of German philosopher Günther Anders can offer an analytical key to explore the relationship between communication and power from a philosophical perspective.

One of the most common objections to any criticism of media and technology is that the goodness, sociality and humanity of these tools depend on how individuals use them. However, for Anders (1956), this implies that individuals retain the ability to dispose of technology and that it is still possible to distinguish between means and goals. The core of Anders' criticism is precisely the structural inversion of means and goals, typical of technology and its expressions in the form of mass media. Technocracy is the era in which the principle of usability prevails. The compulsion to produce and use everything represents the imperative of a technical reason in the name of which what is not usable appears superfluous. In this vein, the German philosopher speaks of a passage from homo faber to homo materia: while homo faber represents the attempt to use technique as an instrument for modifying the environment for human survival, homo materia evokes the possibility of manipulating and exploiting human nature itself, as happens with an energy deposit (Anders, 1956). Anders emphasizes that in several circumstances, the means are not only objects of a possible use but have their own structure and function, which determines both their use and the style of occupations and life – in short, human beings.

On television, the German philosopher observes how images of people and foreign things arrive in the domestic space in the form of intimate, pre-familiarized visitors and have an almost magical power that produces a significant metamorphosis in the relationship between human beings and the world (Anders, 1980). This deceptive confidence is the effect of a space–time credibility achieved through the suppression of the distance between the individual and the images. One of the most important consequences of the familiarization provoked by mass media is the reduction, almost to the point of disappearance, of that extraneousness between the individual and the world, which, in the form of distance and difference, measures the degree of human freedom, allowing the imagination to represent what is not visible to the eyes. Media work on the incessant production of images that reduce the universe to a large domestic environment in which to consume an iconical world through an individualized conditioning that separates millions of solitudes. The

fact that reality, in the form of images and products, constitutes the main category of the individual testifies to the relevance of this epistemological paradigm for the political arena.

Anders (1980) measures the imagification of existence in terms of a progressive defrauding of capacities:

1) The overproduction of images that invade the sphere of existence compromises the ability to discriminate between reality and appearance. Moreover, the spectacle (television/digital) has a boomerang effect that makes reality a function of images.

2) The proliferation of explanations and information can obscure human faculties and compromise the ability to understand the links between events to put them into perspective. A sign of this risk is the progressive linguistic poverty of contemporary communications.

3) The most visible effect concerns the reduction of the sphere of individual freedom – a capacity that requires distance and extraneousness to things – which is exposed to training in the permanent consumption of images that impoverishes the imagination.

Denunciation of the mass media as the quintessence of technology and capitalism, responsible for the profound change in human–world relations, is currently a subject of debate in many fields of knowledge. However, the Andersian debate, developed in all its intransigence in the 1950s, when television was not yet widespread, seems to prepare the ground for the reflections of Jean Baudrillard, Guy Debord, Marshall McLuhan and Paul Virilio. Forty years after Anders, and with a specific look at the virtual world, Virilio refers to the Internet as an amplification of the optical thickness of real-world appearances that compensates for the time compression of instantaneous communications (every image has more value than a long speech). In his view, the technical revolution is a tragedy of knowledge – the Babelic confusion of individual and collective knowledge. Like Aesop's language, the Internet can be the worst and the best of things. The information revolution could lead to a systematic denunciation, ruining the deontological bases of "truth" and, therefore, of freedom of the press: doubts on the truthfulness of the facts, manipulation of the sources and, therefore, of public opinion itself, are premonitory signs that the revolution of real information can be that of virtual disinformation (Virilio, 2005).

This apocalyptic vision, which is not too far from Andersian fears, seems to have political consequences in terms of the quality of democracy. Virilio (2005) warns against the vast "transmutation of opinion in peacetime", where the apparent renewal of representative democracy through direct elements would actually lead to an automatic democracy in which deliberation could be surrogated by polls. The result would be a surface democracy without collective reflection, strongly conditioned by a politics of gestures and promises, more concerned with showing than arguing, where past, present and future risk being old conceptions in the face of a continuous acceleration of reality ("dromocratic" revolution).

Anders and Virilio certainly share an apocalyptic vision. Anders claims it with pride, advancing a philosophy of the occasion which is impressionist, similar to some of Korean philosopher Han's statements about the image and digital. These interpretations have

radical characteristics: after all, they are extreme diagnoses that must not lead to impotence or despair. Anders, a self-declared apocalyptic conservative, warns against technocratic imperatives to preserve the world. Han (2017), however, speaks of the radical change produced by the digital medium as a "drunkenness" that can generate "blindness".

3. Politics and immediacy

The society emerging from global digital communication networks, with deeply modified space–time coordinates, affects power. The rapid effects of the digital revolution on the public sphere, traditionally understood as a space of mediation between the institutional-administrative machinery and citizens, are occurring before the eyes. In recent years, the shift from mass media communication, widespread in the second half of the last century, to a form of mass self-communication in which individuals generate forms of interactive communication that exploit the possibilities offered by information technologies.

Han (2017) writes about the transformation of the public dimension in relation to digital, underlining that digital communication favours a pornographic exposure of intimacy and private life. Digital communication reduces spatial distances but also mental distances, mixing public and private, privatizing the communication itself. Respect between people presupposes a pathos of distance, a look from behind the scenes which is not inquisitorial. Respect is distinguished from spectacle by this distant look. Therefore, the private sphere is the space where I am neither an image nor an object. The question is if there is currently a space where not everyone is neither an image nor an object (Han, 2017). Respect is for a who – an individual who has a name and is, thus, not anonymous. In communication, states Arendt (1988: 12), we always show who we are. Digital communication allows anonymous communication that destroys the basis of respect and with it responsibility and promise (people's acts are nominal). When I write or communicate digitally, there is another temporality that envelops me and does not let the excitement or affections evaporate, as happened with the letters.

Looking at some political transformations generated by the digital revolution, since the late 1990s, social movements have arisen internationally, with claims and participatory demands, which used the network as a tool for self-organization and dissemination of information and messages. Social movements normally pursue political change through communication in a public, multimedia environment, transforming the feeling of indignation into insurgent politics (Castells, 2009). Global access to the Internet and the consequent creation of a networked society has opened up the possibility of massive self-communication through websites, blogs and social networks which allow for creating alternative messages and content against mainstream information and vertical political power. In addition to these emerging global projects, it is possible to reflect on a digital media politics that addresses the power of images; the relationship between facts and representations; the manipulation of news and the issue of post-truth; and the link between emotions, knowledge and politics in the digital age.

Although they have a unifying force, the fact that waves of indignation actually create a public sphere is problematic, as they are unstable and contingent. According to Han (2017), for example, they lack the necessary distance to form a public or a political community. Anger does not always become narrative and action, especially when it is primarily a concern for oneself; it is a transitory affection without perspective or weight, which tends to result in spontaneous dissipation. The digital revolution does not seem to produce a new political subject in terms of a community but a (digital) swarm of isolated individuals (Han, 2017). These individuals, who unite in this swarm, do not constitute a people but a voice, as they produce background noise. Han (2017) speaks of homo digitalis in describing individuals who do not come together, who do not share a common spirit but who, singularized, stand in front of the screen. The digital individual is an anonymous person. Moreover, when these individuals meet (e.g. a flash mob), this possibility is a fugacity without political energy. The digital word refers to the finger, and the finger counts, but it does not tell a story. It counts Facebook friends, actions, quotes, impulses and calories. What is not counted is not. However, if the human being is only because he is measurable, he stops being considered in terms of dignity. The concept of dignity, which is of Kantian origin, indicates the rejection of human reification and its non-reduction to a measurable object (dignity does not have a price). Humanity is probably witnessing a new change in its condition compared to what Anders observes: from homo faber to homo materia in the twentieth century and from homo materia to homo digitalis in the current century.

To analyse how profoundly the digital revolution is transforming the public sphere, it would be necessary to reconstruct the essential elements of this space, from Kant to Habermas, to understand how different the assumptions and functions of this revolution are. At first glance, what seems weakened is the mediation. Public communication, of which the public sphere is at the centre, is the space of mediation. If the gaze shifts to the political level, political parties perform this function of mediation. The digital revolution is leading to growing disintermediation and demediatization. Digital windows allow forms of self-communication and self-organization (insurgent politics). This communicative autarchy undermines the representation of official media as well as the authority of (progressively superfluous) intermediation experts. In politics, as in communication, time is the present and it puts representative democracy in crisis. This has quite significant effects on long-term strategic politics, which never seems to envision the future but is constantly concerned with embodying what the polls recommend. Transparency also imposes an accelerated time on politics that does not allow things to mature. A widened mentality and a broad long-term vision can atrophy in simplified communication without perspective as well as in a negative and unstable atmosphere defined by the pursuit of instantaneous consensus and moods.

The accumulation of data allows for making predictions about the future, at least in most cases, but these predictions reduce what, for Arendt (1988), is the specific trait of the human being: the capability of initiating political action as a native being, where one can do the unexpected and accomplish the infinitely improbable. Humanity is experiencing a revolution in which the most apocalyptic judgements, precisely because they do not

describe but broaden the perspective, seem to show what the eyes do not see. Therefore, in a moment of such profound change, individuals need more than ever to perform exercises in political imagination to see what escapes the eye. This is an epochal change in which the loss of freedom goes not unnoticed because it is reduced to a choice among predetermined options, and this presumed freedom is in itself an object of exploitation.

4. Conclusion

The acceleration of reality in the current century calls into question any representation of the political scene of representative democracy. The coordinates to which modern political philosophy refers to think about the public sphere – reason and universality – seem to be progressively obscured, if not completely replaced, by emotions and particularism. In conclusion, we must remember the synthetic functions that representative democracy performs: to defend democracy itself from the impatience of citizens, to maintain a distance that allows democracy to separate itself from the power of the present and to act in the general interest. The perception of time, the vital space of democracies, is complicated by technological accelerations that seem to be leading to a breathless age and a lack of time in which stops and passages, oxygen for the aesthetic dimension of politics, are compromised. This does not mean ignoring the digital or the growing technicalities of reality. However, at a time when the predominant use of technology is no longer just instrumental, the challenge is, paradoxically, to make improper use of that device: bringing it back to a means to an end. However, this first requires diagnosing an eye defect, as José Ortega y Gasset (2017) states when discussing the political crisis in Spain in the 1920s. This defect causes avoidance of seeing the facts in perspective, conferring on the insignificant a grotesque importance, and consequently, not knowing the relevant facts. This distinctive and orienting look is, for the Spanish philosopher, a "synoptic talent" and rhymes with the Andersian thinking eye (Ortega y Gasset, 2017: 19). To see and feel in perspective and depth, when everything is lost in the details, in the shower of images and information, the individual must do exercises of fantasy, imagination and sentimental hypertension. Art continues to be a way to expand the imagination and stimulate the prospective understanding of facts.

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Section III

Dissemination

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10. *Digital Mind Invasion: Far-right individuals and socio-technical disgust*

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Abstract

Modern Internet infrastructures offer to far-right groups a complex network of platforms on which to foster users' radicalization. Alongside more established cognitive components, this article argues that a crucial (and partially neglected) factor in driving far-right extremism is the anti-immigrant disgust that far-right members instantiate in these digital locations. In my analysis of the relationship between disgust and extremism, I adopt a situated affectivity approach via the concept of mind invasion. Mind invasion considers the affective dynamics conducive to extremism as driven and supported by the socio-material design of the platform. In other words, mind invasion views platform organizational dynamics and the social interactions that unfold within it as structuring elements of the users' affective experience. I apply this analytical perspective to the examination of context-driven disgust among far-right members on the image board 4chan.

0. Introduction

Over the past few years, far-right movements cluttered a vast hodgepodge of digital platforms to disseminate their message and sign up new recruits. Both major video-sharing services like YouTube and minor social media like Gab had their fair share of extremist contents (Reed et al., 2019). Relatedly, quantitative studies showed that anti-immigrant images and racist slurs have more than doubled since 2016 (Ebner, 2020). On the other hand, researchers showed also that platforms recommendation systems create a watching pathway that may encase individuals in a platform-driven far-right environment (Alfano et al., 2020; O' Callaghan et al., 2015). While providing a comprehensive account of how frequent exposure to violent footage leads someone to extremism, these studies neglect the impact that affective states have on the radicalization of individuals. In my paper, I fill this gap. More specifically, I aim to pinpoint how anti-immigrant dehumanizing disgust favors the enculturation of new members into far-right online groups. In doing so, I will adopt the approach of situated affectivity and the notion of mind invasion. This approach singles out how people's emotional experiences are regimented by the socio-material structure of a particular location. This way mind invasion gives credit to the magnitude of platform design and social interaction in shaping the disgust-based affective dynamics among far-right users. I then apply mind invasion to the image board 4chan to describe how contextual-driven anti-immigrant disgust fosters radicalization.

Here is the plan for this paper. In section one, I introduce the political agenda that give rise to anti-immigrant disgust and how far-right implemented this agenda on the Internet. In section two, I examine the neurophysiological components of disgust and its relationship

with dehumanization. In section three, I introduce the approach of situated affectivity and the concept of mind invasion. In section four, I use mind invasion to analyze far-right disgust on 4chan.

1. Online Disgusting Nativism

A manifesto uploaded online a few hours before the attack; a link shared on an image board (8chan); a first-person shooter-like footage live-streamed on a social media platform. In 2019, the Christchurch, the El Paso, and the Halle terrorists combined some or all of these elements in their massacres so much that scholars started to recognize a common pattern in the latest trend of far-right lone-actor terrorism (Ware, 2020; Hartleb, 2020). Terrorism expert Peter Neumann asserted that these one-off events should be looked at as loosely coordinated attacks in which perpetrators compete with each other in a sadistic body count race (Wilson, 2020). In a similar vein, Gill (2015) defines modern lone-actor terrorism episodes as a learned `contagion´ phenomenon.

At first glance, it seems that terrorists have become *prosumers* of their attacks. With this expression, Jenkins (2006) points out how new technologies and platforms allow single individuals to take things into their own hands and instantiate a 21st-century *propaganda of the deed* whose messages get directly broadcasted on other users' screens.[1] Why do loners embark on such deadly solo missions? Judging by their writings, they consider their action to be a defensive measure necessary to preserve the continuation of a White race facing extinction. In other words, they are enacting a popular political agenda among violent far-right supporters that prescribes the physical removal of different groups of migrants from Anglo-European lands. According to them, this is the only way to prevent the replacement and assure the survival of so-called White peoples (Ware, 2020). It is no coincidence that replacement and survival are two recurring terms in these terrorists' manifestoes. For instance, Brenton Tarrant, the Christchurch attacker, titled his manifesto *The Great Replacement* and claimed that "[W]e must crush immigration and deport those invaders already living on our soil. It is not just a matter of our prosperity, but the very survival of our people" (p. 4). His words were closely echoed by Patrick Wood Crusius who described the reasons for his shooting against Hispanics as "simply defending my country from cultural and ethnic replacement brought on by an invasion" (Crusius 2019, p. 2). Such vitriolic language exhibits an extremist ideology that perceives migrants and refugees as a multi-tier existential threat. First, immigrants are envisaged as a sexual threat: they are accused to be a replacement factor on the basis of misinterpreted demographic projections or deviant harassers, harbingers of dangerous rape and pedophilic cultures (*rapefugee* is the new jargon used in far-right online circles to refer to asylum seekers). Second, they are considered a safety threat, i.e., agents capable of killing innocents by the thousands through vile terrorist attacks. Third, migrants are thought of as a cultural threat that risks

1 By no means do I intend to say that the platforms and other technological services cited throughout the paper were intentionally designed to spread or facilitate violent action. All I am saying is that terrorist individuals and circles repurpose some of their features to promote their violent agenda.

rotting the scientific, social, and technical achievements of a supposedly superior Western culture while importing a slew of foreign barbaric traditions, e.g. genital mutilations and female submission (Davey and Ebner, 2019; Berger, 2018).

Experts examining the migrant-threat coupling in the far-right scene have detected an overall tendency to privilege cultural differences over biological ones (Gattinara and Pirro, 2018). A sound explanation thereof lies in the empirical and legal impossibility to advance race-based claims related to human cognitive skills. On the one hand, the very notion of race has long been debunked by a vast series of data-driven anthropological and psychological studies (Sussman, 2014). On the other hand, in most countries promoters of racial inequalities – whether parties, movements, or single individuals – would get immediately banned and sentenced. What is more, the overemphasis on life-threatening cultural incompatibilities has turned out to be an extremely fertile political ground. The success enjoyed by radical right-wing figures in countries like Austria, Italy, or the Netherlands and the rise of the Alt-Right in the U.S are clear signs thereof (Rheindorf and Wodak, 2019). However, the prominence of nurture does not mean that nature has no role to play in the far-right explanatory arsenal. Defused by the test of empirically informed science, several studies delineate how racial overtones are still up and kicking in contemporary extremist subcultures. For instance, Panofsky and Donovan (2019) expound on the popularity of Genetic Ancestry Testing (GAT) among White nationalists. They argue that users of the forum *Stormfront*, the biggest digital right-wing rallying point, pressure each other into taking GATs to show that their blood lineage meets the membership requirements of the site. You are accepted as a forum affiliate if you are White and, as senior moderator John Law remarks, a person is compatible with the white threshold if "he looks White and thinks of himself as White and is the kind of person our other members wouldn't mind their sisters marrying – and if we know he is no more than one-sixteenth non-White" (p. 654). Relatedly, participants go to great lengths to accommodate unexpected "genealogical dislocations" (Nelson, 2008), i.e., unpleasant genetic results that might compromise their stay on the forum. Technological failures (GATs are defective) or irresponsible ancestry behaviors are scapegoated by far-right users to mitigate the disappointment coming from unsatisfactory outcomes. Along similar lines, the magnitude of racial concerns is manifested also by the surge of "Aryan" dating websites aimed to curb the unwarranted effects of allegedly inappropriate mixing and miscegenation. WASP Love is a case in point. Under the motto "Love your Race! Procreate!" users sign up with the hope to find a marital partner by showing off a "pure" ancestral pedigree (Ebner, 2020).

Perhaps more importantly, far-right factions frame the supposed biological perils posed by migrants by resorting to Nazi-inspired body politics metaphors. Labels such as 'parasites', 'scum', and 'rats' are stitched to Muslims, Africans, Romas, or Jews, and turn the latter into infectious disease-carrier pathogens that feed off of a decomposing *Volkskörper* in far-right narratives (Klein and Muis, 2018; Musolff, 2010). Although these incendiary expressions are commonplace among the rank-and-files of violent non-institutionalized groups like skinheads, research suggests that a nuanced version of body politic talk is progressively funneling into official parties as well (Rheindorf and Wodak, 2019).

All in all, the alleged contagious foreignness of migrants seems weaved in a bio-cultural red thread starting with 19th-century eugenic theses, and making inroads into scientific racism, racial realism and cultural uniqueness (Tenold, 2018; Sussman, 2014). Scholars agree that the fibers that hold this red thread together are composed of modern nativist tenets. Cas Mudde maintains that nativism is the benchmark at the basis of every violent far-right movement (Mudde, 2007). Threat and nativism are tight-knit concepts. The author intends the latter as a worldview "*which holds that states should be inhabited [...] by members of the native group ("the nation") and that nonnative elements (persons and ideas) are fundamentally threatening*" (ibid, p. 19 italics in the original). While stemming originally from a deep-seated American antagonism towards new waves of migrants – Southern Europeans, Germans, and Asians all took turns in experiencing massive nativist bashes (Fry, 2007) – far-right parties and social movements successfully co-opted the territorial features of nativism to expound their exclusionary version of nationalism (Scrivens and Perry, 2016). Indeed, if what is at stake, to paraphrase the commonplace supremacist credo, is "the existence of 'our' people and the future of white children", a core element in the far-right playbook regards the elaboration of well-oiled machinery of borders and barriers aimed to keep the foreign, constituents at a safe distance (Perry and Blazark, 2010).

When parsing through the galaxy of far-right movements and subcultures, one is immediately struck by the hot debate around the spectrum of confinement strategies that lie open on the table. Some take a more traditional stance and voice for a detailed plan of segregation and immigration restrictions. Others, instead, like the columnist Samuel Francis, opt for a more aggressive approach and advocate to leverage on the white man's "instinctual […] proclivity to expand and conquer" and thus re-establish a proper ethnostate (quoted in Sussman 2014, p. 276). A third perspective is more focused on charting new organizational spaces for the far-right to safeguard the heritage handed down to the members of *das Volk* who increasingly consider themselves the "new minority". For example, a participant of an extreme right Discord[2] channel singled out the urgency "to build islands in our lands, maybe patriotic villages where we can conserve our culture" (Davey Ebner 2019, p. 14). Ultimately, regardless of the proposed eviction procedure, the nativist right-wing nationalism possesses a territorial connotation that leads its advocates to claim ownership rights over land on behalf of a homogeneously national community (Pelinka, 2013). Needless to say, the documented existence of such a community has proven to be fallacious: as it is often the case with most extremist factions, their perceived natural entitlement to populate and rule over a circumscribed area is grounded more on myth production than on historical records (Wodak, 2015). In fact, by tracing back the sociopolitical dynamics involved in the birth and making of modern nations to a distant (and glorious) past, far-right activists leverage on concepts like *Fatherland* or *Homeland* to substantiate the connection between a White locality made for White people (Wodak and Forchtner, 2014; Wodak, 2015). Notoriously, groups have been able to carve out

2 Discord is a chat application and a digital distribution platform designed to create communities around topics such as gaming and educations. As it will become clear along the paper, far-right movements have hijacked its organizational features for their own purposes.

indigenous communities where to implement an "Aryan lifestyle". However, these inland places fall short of the large-scale plan of building a whole genuine nation. Rather, as Simi and Futrell (2010) point out, they constitute seldom scattered way stations for pilgrims to stop by and have a foretaste of a full-immersion White experience.

The opportunity for far-right groups to implement their narrative that combines the protection of "one's people" while excluding migrants comes from modern Internet infrastructure. Taken at face value this assumption sounds everything but surprising. Far-right actors have been pioneering enthusiasts of the Web. As early as 1984 George P. Deitz already used a bulletin board system to disseminate supremacist propaganda and former Klansman Tom Metzger soon followed suit (Jackson, 2016). Over the years, almost every new right-wing actor coming on the scene launched its website to promote and market a wide arrange of products. Aryan music albums, clothing, literature, and merchandise found in Internet forums an inextinguishable repository (Caiani and Parenti, 2013). Most importantly, however, these new digital services clustered up hordes of like-minded extremists who could openly spit thousands of insulting keystrokes and affirm that migrants are a cancerous threat. Safe from the legal and moral repercussions of publicly articulating racist views on the street, users gathered and piled on each other in demonizing immigrants as polluting races contaminating the biological makeup of original White inhabitants. In a recent longitudinal study, Scrivens and colleagues analyzed the evolution of Stormfront users' posting behavior towards Jews, Blacks and LGBTQ individuals and found that, as time passes by, there is an increase in the aggressiveness of the expressions used to describe all three categories (Scrivens et al. 2018).

If one lingers on the kind of anti-immigrant language reported in these comments, a chronic component of their makeup is the emotion of disgust.[3] Apart from the abovementioned disease-related terminology, there is an abundance of animalistic, subhuman, and fecal remarks tied to the inherent disgusting nature of migrants. Epithets like *apes* and *shit skins* are a daily occurrence on right-wing forums. Interestingly, because of its threat-like configuration, disgust seems connected to both the distancing (protective) dynamics involved in far-right nationalism and aggressive behavior towards members of out-groups perceived as nonhuman and, therefore, the worth target of violence (Matsumoto et al., 2015).

However, radical discussion boards are just one of the digital bottom layers that facilitate the cementation of disgust among right-wing extremists. As the network degree of the Internet increased and new services began to surface, right-wing actors manage to transpose their disgust on every platform available. Crucially, in some cases, the organizational logics of these platforms contribute in significant ways to the formation and the degree of right-wing anti-immigrant disgust. In other words, features like, anonymity, and algorithmic

3 Far-right movements resort to a huge plethora of affective states to sustain their political agenda. For instance, in his comparative account, Jensen (2017) highlights the interrelated role of hate, fear, disgust and anger in driving political behavior among 20th century Nazis and modern right-wing groups. While I recognize that far-right users' affective experience encompass a dynamic combination of all the above-mentioned emotions (and many more), in this paper I focus on disgust as a well-established factor that intervenes in the creation of exclusive right-wing-only online spaces.

notifications coupled with the continuous interactions among users may create a socio-technical infrastructure that induces a disgusting affective experience. Importantly, all the environmental specifics of a particular platform must be accounted for when examining how the latter may condition the emergence of disgust. The ethnographic research of Davey and Ebner (2019) took an encouraging first step in this direction and provided a topology of the Internet services colonized by extremist right-wing users. They list:

Extremist in-house creations**:** platforms created to offer a safe haven for extremists. These include the Identitarian social networking app Patriot Peer.

Ultra-libertarian platforms: platforms created by libertarians or commercially driven developers, which tolerate violent and extremist content and do not proactively take down any content. These include the Twitter substitute Gab.

Hijacked platforms: platforms created for an entirely different purpose, which have been hijacked by extremists who are proactively engaging in counter-extremism efforts. These include the gaming chat channel Discord and Twitch.

Fringe platforms: popular platforms that serve as the engine-rooms for internet culture, and often as a home for loosely organized communities of internet trolls. These include the image board 8chan (p. 24).

Another important factor to consider when analyzing how the platforms are environmentally involved in the formation of anti-immigrants disgust is their mutually-sustaining relationships. Suffice to say that all of the terrorists cited at the beginning of the section crisscross multiple platforms in operationalizing their attacks.

If far-right online groups use a dehumanizing language to present migrants as an existential threat and threat construction is highly (but not exclusively) dependent on disgust, now it is time to examine the physiological and moral components that link disgust to menaces.

2. Disgust

There is overall agreement that disgust evolved in humans as a disease avoidance mechanism calibrated to protect organisms from grave environmental sources (Curtis et al., 2011). Taking this adaptionist perspective, researchers spent a considerable amount of ink on charting and sorting its causes. Classification models that list disgust elicitors commonly comprise rotten foods, bodily fluids, animal wastes, sickened people and socio-moral violations (e.g. incest) (Rozin and Fallon, 1987). Such elicitors are deemed to be universal and, except for moral violations,[4] they all share a feature that makes them particularly dangerous: contamination. "Contamination occurs when there has been contact between a neutral item (e.g., a shoe) and a disgust-inducing elicitor (e.g., feces)" (Stevenson et al.,

4 Moral violations can be contaminating as well. In ancient Greece, for instance, murderers were believed to be infected with a moral and religious polluting air (miasma) and needed to perform purification rituals before being allowed to re-enter the city.

2019, p. 210) and it renders "the contaminated object disgusting" (ibid, p. 210). As a result, contamination grants disgust with a transferability that makes every touched object a new pathogen-laden threat for our persona. Our body itself does not shun this contamination mechanism. In fact, were the latter to come across a revolting object, we would become disgust carriers in the eyes of others. Disgust's transferability is well-illustrated by Charles Darwin. In *The Expression of the Emotions in Man and Animals* he writes:

In Tierra del Fuego a native touched with his finger some cold preserved meat which I was eating […] and plainly showed utter disgust at its softness; whilst I felt utter disgust at my food being touched by a naked savage though his hands did not appear dirty (Darwin, 1904, p. 269).

In the passage, the preserved meat getting eaten by the British biologist turns from a savory lunch into a disgusting meal only after being touched – i.e. contaminated – by a naked savage. Importantly, as Darwin's example shows, for disgust to be elicited a *real* contagion agent is not mandatory; all is needed is an assumed polluting contaminant. The savage's hands do not appear to be dirty but Darwin can't help feel utter disgust nonetheless. This observational intuition has found solid empirical confirmation. In a series of studies, American students refused to drink fresh juice after watching a knowingly sterilized cockroach being dipped in the beverage (Rozin et al., 1986). The experimental setup was designed to investigate the so-called laws of sympathetic magic whose principle might be summarized in the Contagion (1) and the Similarity (2) formulas 1) *Once in contact, always in contact*; 2) *Shared properties indicates shared identity.* These laws have been shown to colonize both religious practices (e.g. Christian Eucharist) and folk culture (e.g. the belief that you are what you eat) (Strohminger, 2014). Therefore, contact, or rather, the prospect of contact between one's body and a contaminated other seems to be the key functional mechanism at the basis of disgust-regulated contamination.

In her reflections on the political impact of disgust, Sarah Ahmed (2014) argues that disgust "operates as a contact zone" in which disgusting objects keep threatening to trespass the boundary lines between themselves and the subject. The latter, in response, tries to bolster the borders of its body integrity as much as possible and, when they get violated, it triggers off a quick vehement expulsion reaction like ratcheting after ingesting a bug. Continuing on reasoning about the political implications of disgust, she furnishes various examples in which this emotion is elicited by the use of metaphorical language.

The phenomenon she hints at has garnered growing attention over the last two decades in the field of affective studies and goes under the name of dehumanization. Dehumanization has been characterized as the tendency to systematically deny out-groups the attributes that signal their unique humanness such as high-order cognitive abilities or emotional affection (Haslam, 2006). One frequent tactic is to strip out-groups of their human

nature by comparing them to animals.[5] The link between dehumanization and disgust is recognizable in the kind of animalistic creatures out-groups are commonly associated to. In fact, not any animal will do the trick. Indeed, groups, sometimes, take pride in being juxtaposed with feral beasts that are culturally sanctioned as bringers of keen physical or cognitive capabilities. Consider all of the sports teams named after eagles, wolfs, and bears as signs of strength and shrewdness. In dehumanization, instead, out-group members are associated with "basic" pathogen-laden creatures that dwell in habitats grooming with disgusting cues. Historically, genocide and intractable conflicts (e.g. Palestine-Israel) have provided continuous fodder to the analysis of disgust-based dehumanization (Halperin, 2016). For instance, during the Rwanda mass slaughter, Hutu radio stations instigated the killing of hundreds of thousands of Tutsi at the cry of "stomp the roach, stomp the roach" (Sapolsky, 2017). Likewise, the Nazi propaganda figured Jews and Roma as slimy leeches sucking the blood out of Germany's body (Chirot and McCauley, 2006).

The idea of disgust-based dehumanization has found convincing empirical support in multiple studies carried outside of a genocidal context. In social cognitive neuroscience Harris and Fiske (2006) discovered that participants exposed to pictures of deviant outcasts rated as incompetent and hostile (homeless persons and drug addicts) showed no activation in brain areas concerned in several social cognition tasks (e.g. the medial prefrontal cortex). Moreover, these groups provoked a marked elicitation of the amygdala and the insula, a neural pattern consistent with the feeling of disgust. Their findings give credit to the fact that disgust does not operate solely according to a "horizontal" interethnic perspective, but it also regulates hierarchical social relationships within the same ethnic in-group. Along similar lines, Skinner and Hudac (2017) used an ERP measurement and found out that photos of interracial couples trigger more insula activation than those of same ethnic couples. They took a step forward and, in a further study, established a causal connection between disgust and dehumanization. In a categorization task participants primed with disgusting pictures exhibited faster response times at assigning interracial couples to an animal set (and same-ethnic couples to the human set) than subjects in the control (non-disgusting) condition. (ibid, Study 3).

Social psychologists, on their part, collected a vast amount of evidence to illustrate that (social) disgust and dehumanization are natural bedfellows. For instance, Buckels and Trapnell (2013) discovered that the interethnic dehumanizing disgust in Skinner and Haduc (2017) holds also for minimal lab-made groups. Closer to the scope of the present paper, research that involves populations entangled in a violent confrontation fall in line with the claims of spatial exclusivity advanced by the far-right in the previous section. Using nation-wide surveys, Moaz and McCauley (2008) measured Israeli citizens' dehumanization toward Palestinians using the so-called disgust assessment scale. Results showed that the disgust-based dehumanization was a reliable predictor of both 1) relocation policies (e.g. population transfer) and 2) coercive policies (e.g. military intervention). If we take into

5 Another type of dehumanization referred to as mechanistic equates human beings to machines as when bureaucrats or doctors are compared to heartless automata (Haslem, 2006).

account the proposed policy measures – population transfer and military intervention – we see how they entail two different action tendencies. Population transfer seems to be consistent with a disease-avoidance behavior aimed to prevent future contact with the disgusting agent. The list of confinement measures adopted in different historical epochs is long and varied. The best documented example(s) comes from Black segregation in America. Since African-Americans were stigmatized as dangerous polluting germs, their life was strictly spatially regulated. They had *their own* toilets, *their own* bars and *their own* bus seats (Smith, 2006). On the other hand, military intervention promotes a counterintuitive approach movement that implies closer physical proximity with a threatening organism. Since extremist far-right actors have engaged in (or at least proposed) both types of actions, we will now look at one way dehumanization experts have explored to account for disgust's behavioral heterogeneity. The short answer is that animalistic dehumanization – especially in the context of intergroup relations – is likely to elicit other emotions alongside disgust. A growing body of research shows that anger is an intimate disgust's companion in blatant and subtle forms of dehumanization (Giner-Sorolla and Russell 2019). Anger has an attack behavioral tendency and its co-activation with disgust explains why, under proper conditions, we might decide to physically remove or crash a disgusting stimulus.

The dynamic interaction of anger and disgust in dehumanization practices adheres to contemporary frameworks of intergroup aggression like the ANCODI model (Matsumoto et al 2015). They propose that ingroup/outgroup violent episodes often involve the interplay of three emotions: anger, contempt and disgust. According to them, it is this explosive emotional triad that gives way to violence against the out-group. Anger provides the attacking behavior; contempt grants in-group members with moral superiority, while disgust presents out-group members as infectious animals worthy of violence. The authors find support for their thesis by analyzing the language of leaders' speeches that either gave in into rioting protests or resulted in peaceful demonstrations. Unlike conflict-free street marches, the language used in the months and days that preceded a violent outburst showed a dynamic combination of these three emotions.

In this section, we have examined the evolutionary origins of disgust, its elicitors, its behavioral component and the way(s) in which this emotion is connected with dehumanizing practices through the use of metaphorical language. It is through the iterative circulation of metaphorical language and images in separate but interactive online spaces that far-right supporters frame the immigrants as disgusting existential threats. However, the compelling socio-psychological and neuroscientific evidence that we presented has been gathered either using self-reports or *disgusting* snapshots in lab-controlled setups. As a result, it glosses over the impact exerted by various contextual factors on the onset, development and quality of the immigrant-directed disgust among the radical right-wingers. To correct this shortcoming, we now introduce the approach of situated affectivity and, in particular, the concept of mind invasion, to show how far-right disgust is crucially dependent on the digital sociotechnical infrastructure and social interactions in which it takes place.

3. Situated Affectivity and Mind Invasion

Situated affectivity has initiated a groundbreaking shift in the philosophy of emotion. In a nutshell, it argues against internalist frameworks according to which affective states are an all intracranial business that only concerns the brain-bound circuitry of single individuals reacting to environmental changes. Conversely, advocates of situated approaches maintain that environmental structures influence and actively shape human affectivity (Stephan and Walter, 2020; Stephan et al., 2014). Classic examples regard how individuals leverage on contextual resources to regulate their moods and emotions. Different authors pointed out that people furnish their apartment to promote particular affective experiences: we manipulate and rearrange items, colors, light and sound conditions to facilitate or avoid certain emotional responses. For example, we might deprive our bedroom of the pictures and belongings of our ex-partner to eschew episodes of jealousy and sadness (Stephan et al., 2014). Taken together the crucial point regards the fact that, while inhabiting these spaces, our affective processes are not confined within the physical boundaries of the individual; rather, they are *world-involving* that is they depend on and are sustained by the situational components that make up these environments (Colombetti and Krueger, 2015).

However, a more recent perspective takes issue with "a certain one-sidedness" (Slaby, 2016, p. 2) inscribed in situated approaches to emotions in that the context is not paid enough credit for its affective service. Slaby claims that many case studies employed in the literature on situated affectivity (as the ones I present) privilege what he calls the user/resource model. Here the "individual with his or her interests, inclinations, intentions and strategies is taken for granted as a starting point that is then placed in purposeful conjunction with a technical device or an environmental structure so that an effective coupled system of "user-plus-tool" results" (ibid, p. 6). Such is the case of apartment decorating: an autonomous agent deliberately selects a vast host of articles to modulate her emotional dispositions. The environmental configuration contributes to her overall emotional experience. Yet, the former lies always at the mercy of the decisions and aims of the single individual.

With *mind invasion,* Slaby offers a complementary outside-in perspective to situated affectivity to "capture some of the ways in which it is exactly not my individual decision to employ a mind tool in the pursuit of my self-avowed goals, but rather forms of pervasive framing and molding effected by aspects of technical infrastructure and institutional realities" (ibid, p. 6). The socio-material arrangement is not simply out there in a pristine format that only activates its affective import when a subject decides to use it as a regulative tool. Social domains come already provisioned with an evolving affective tonality shaped in subtle and blatant ways by the socially distributed patterns in which technology logics, interpersonal relations, and cultural values stick together. In open opposition to the user/resource model, Slaby considers the starting point of situated affectivity to be an emotionally subject walking into a social domain that, over time, makes the latter fall in line with the domain-sanctioned affective patterns. In other words, the subject undergoes an outside-driven process of gradual affective habituation with her mind (and body) being

hacked by the socio-material facilities and norms in force in the context in which she dwells. To have a clear picture of how this hacking operation works, Slaby draws the scenario of a fresh intern beginning a traineeship at a company. During her first days, the newcomer will not only ignore the proper way to execute work-related tasks. Also, the interpersonal dynamics going off between her more mature colleagues will come as rather alien: she does not know how to happily react to an inside joke nor how to respectfully address her superiors. In other words, she is affectively out of tune. As time goes by, however, she will learn all the moves to best handle the anxiety connected to the fear of lagging behind on the massive flow of emails and she will know the "going to colleagues" to have a relaxing break. Simply put, she will enter a complex web of affective socio-material patterns that will nudge her affective experiences in a certain way up to the point that she will turn from an emotional inexperienced trainee into a structured company member capable of playing by the company-sanctioned affective rules. Importantly, in this emotional transformative process, the individual is not a passive *tabula rasa* to be filled up with affective rules manuals but an active player contributing to the overall affective tonality through different sets of small day-to-day affective gestures and comportments.

Thanks to its context-centeredness and distributed character, I argue that "mind invasion" is conducive to describe the situated affective (disgust-based) dynamics instantiating among far-right circles on digital platforms. Just like the inexperienced intern tailors her affective responses to the contextual pressures exerted by her work environment, the new member in a far-right online group progressively attunes her emotional reactions to the moves, rules and interaction modes implemented by the far-right groups on the digital infrastructure. Such infrastructure consists of a technical component (comprising the platform design and features); and a social component (constituted by the activity of other users) (Gillespie 2018). Even though in the case study analysis I present the technical and the social components separately, one must keep in mind that, on the Internet, they stand in a close-knit relationship of mutual reciprocity, insomuch that a change in the technical component leads to a corresponding rearrangement of the social one and vice versa. Concerning this point, many experts claim that in modern digital spaces a full-fledged disentanglement of the respective contribution of the technical and the social aspects is moot (Smart, 2017).

A growing amount of research started to show that the design of social media and other digital platforms nudges users' behavior in precise ways. Surely, users click, select, write and ignore, but they do so on platform's terms that is, their spontaneous interactions are confined within the templates, features and codes implemented in its default choice architecture (Sunstein 2015). In some cases, platform-based interactions can lead a person to form or enter far-right extremist online spaces. For instance, Alfano and colleagues (2020) talk about technological seduction to picture how users' online activity – mediated by algorithmic selection and platform pre-programmed design – might steer them toward a self-made right-wing environment. Mind invasion offers a complementary perspective in that it provides an analytical tool to understand how platform mechanics and social interactions intermingle to mold the disgust-based atmosphere that characterizes some

far-right online environments. As my case study, I selected the platform 4chan since it has been recognized as one of the most trafficked avenues through which recruits get "encultured" into far-right movements.

4. Digital Mind Invasion: 4Chan

The discussion board "Politically Incorrect" (henceforth /pol/) on 4chan.org has been described as a digital underbelly of far-right subcultures. White supremacists, Neo-Nazis and other extremists all gather here to express their racist views on a plethora of phenomena. Among the most recurrent topics are a series of anti-immigrant talks that range from Jews controlling global finance to Muslim *diluting Western racial purity* due to a coordinated *mass invasion* (Mittos et al. 2019). Created by Christopher Poole in 2003 and acquired by Hiroyuki Nishimura in 2015, the platform is an imageboard that revolves around a digitally old-fashioned bulletin board outlook (Hine et al. 2017). 4chan uses boards, threads and posts. A user (original poster) starts a thread with a post that must contain an image and a particular interest focus. Other participants can reply with images, text, quotes and cross-references to previous posts. Different commentators have singled out that /pol/ has become a hub for hate speech and off-limit materials acting as a gateway for "redpilling"[6] recruits in violent far-right movements (Ludemann 2018) and, more importantly, it acted as the digital starting point for lone-actor attacks.

While 4chan remains an under-researched platform, a few studies have highlighted the enormous quantity of dehumanizing language and images that circulate undisturbed in this online space making it a suitable confined space for far-right users to create a never-ending disgusting atmosphere (Hine et al. 2017). Crucially, 4chan disgusting atmosphere can be considered situated, i.e., the combined result of 1) the dynamics underlying the technological design of the platform and 2) the explicit or subtle interactive modalities between senior and new members. Moreover, a focal point regards the framing effect that the socio-material arrangement of the platform has on the affective dispositions of the inexperienced individual who approaches such an environment for the first time. For instance, features like anonymity and ephemerality intertwine with the loose human moderation and other practices of far-right /pol/ members in invading the mind of novices. The latter, in return, gradually adjusts her affective patterns to the ones sanctioned in this social domain and, thus, becomes a functional gear in the infrastructure that contributes to the far-right fast-paced disgusting atmosphere. Let us now explore in more detail the mechanisms through which new users habituate to the affective styles of 4chan far-right environments.

Unlike most other online services, 4chan does not require any type of real or pseudonymous account. The default modality to write and read posts is under the *Anonymous* tag and, even though users can potentially opt out (weakly by using hashes of passwords or strongly by

6 The expression "redpilling" in the white supremacist subcultures indicates the act of potential new members "waking up to the *truth* that the White race is being replaced". It is a reference to the popular blockbuster *The Matrix*.

filling in a name), other community members vehemently discourage this choice by labeling "identifiable" users as *namefags* (Ludemann 2018). Suler (2004) investigated the impact of online anonymity and pointed out the so-called "disinhibition effect" according to which anonymous users are more prone to engage in mob-like aggressive verbal behavior. The link between anonymity and the online disinhibition effect has been attested on multiple (semi)anonymous platforms, among which is 4chan itself (Bernstein et al. 2011). The impossibility of being tracked and surveilled, therefore, functions as a technological affective incentive to use harsher dehumanizing expressions or disgusting images along the many immigrants insulting threads. For instance, within five minutes, a post asking "What do Indian/white mixes even look like?" was followed by answers like "Indians give birth from their asses" and "Half white half poo in Australia". Anonymity-sustained disgust is only one part of the story. If, on the one hand, platform anonymity hardens the use of disgusting language, on the other hand, the continuous social interactions between "senior members" and "freshmen" (they post about their newcomer status) end up habituating the latter to the overall affective climate through active participation. To become community members, users are pressured to engage in a specific practice: an inside competition about who can start the most disgust-inducing visual thread. The outcome is a slew of powerful degrading images that depicts immigrants as creatures with an uncivilized animalistic nature (some of the most appalling pictures include refugees on rubber boats being juxtaposed to ships filled with rats). Subsequently, should a thread get many reactions, new members are urged to claim identity over the thread through *timestamping*, i.e., they attach to it a screenshot with the current day and time (Berstein et al. 2011). Here we see how far-right advocates' social practices setup a digital setting made of images, posts, reactions and jokes that steer members to conform their emotional repertoire to a pre-existing and perpetuating affective tonality. In other words, the thread competition and following reward – through status recognition – signal a social initiation mechanism by which new members start falling in line with the disgust-inducing routines of the community.

Ephemerality is another platform design mechanism that guarantees the experience of a fast-paced disgust. In a digital world in which social media are characterized by unlimited data archiving so much that 50 years-old contents are just a click away, the life of a thread on 4chan is time-sensitive and, on average, it does not last more than 4 minutes. As new material comes in older threads slide down the pages and, even though they bounce back on top with every new reply, there is a reply limit after which the thread turns inactive and then gets deleted. Such a swirling flow of outputs fuels and, in the long run, habituates individuals to a fast-paced disgusting atmosphere. They adopt different strategies to keep disgust up and kicking on /pol/. On the one hand, each member is advised to create a folder on their laptop or mobile phone where to save those pieces of content worth to be reposted or remixed. On the other hand, the continuous flow between incoming and expired threads compels members to stay tuned on the platform so as not to miss out on any new conversation or picture.

Beside the technological arrangement, users´ familiarization with a disgusting atmosphere is also facilitated by the absence of any human intervention on content and language

moderation. Unlike more mainstream social media platforms, 4chan does not perform any supervising task on the kind of media outputs and materials that circulates on it. This is why, for example, one can still find footage of the horrible Christchurch attack. What is more, this lack of moderation enables far-right users to create and share appalling memes, horrifying videos, and deranged video game versions praising the terrorist operation. In so doing, far-right activists set up a platform supported disgusting layout in which new users are invited to partake (e.g. by testing the functionality of the video game Christchurch map). In all honesty, 4chan possesses a rudimentary moderation system. On the one hand, before accessing /pol/ users are made aware that /pol/ contains explicit language. On the other hand, illegal content gets sometimes removed by volunteering individuals. However, these so-called "janitors" are themselves the targets of disgust as they are referred to as "parasites at the service of the Zionists" (Hine et al 2017). Another important gateway to assimilate new users in the affective dynamics of 4chan's far-right subculture regards language acquisition. As people keep getting entangled on 4chan, they develop and learn a *disgusting* in-group vocabulary suited to have a fluent emotional experience on the platform. The jargon functions as an identity signpost to distinguish in-group from out-group members. Similar to natural language acquisition, aspiring members increase their proficiency only by recursive interactions with "native speakers". Indeed, not only do experienced members provide reliable posts for novices to take up the use of far-right specific expressions. They also perform explicit normative feedbacks by correcting or ridiculing participants' language mistakes. Different migrant groups are connected to different words: "googles" stays for Blacks; "skypes" is a substitute for Jews; "yahoos" refers to Hispanics and – after Donald Trump addressed refugees as the candy that could kill you – "skittles" replaces Muslims (Hine et al. 2017).

Lastly, the socio-material design of the Internet coupled with portable technologies allows 4chan disgust to spill over to other platforms. For instance, /pol/ dwellers periodically organize "raids" to attack YouTube channels or Twitter profiles with swarms of dehumanizing comments and GIFs. Here, "raiders" that take action coordinate their recurrent operation leveraging also on the algorithmic notification system of social media systems. When a target is chosen a link is shared on 4chan. Then, users subscribe to a channel or a profile with fake or hidden accounts. Since the attack usually follows a new update status by the target, they wait for the notification algorithm to signal the update, and, in mid-sized to large cohorts, they rapidly create a temporary dehumanizing environment in the comment section of, for example, a video. Becoming a functional raider requires a prolonged interaction with far-right 4chan procedures. Newcomers must get acquainted with the best ways to coordinate their behavior with the actions of other users. For instance, they must familiarize themselves with what counts as an effective dehumanizing comment and with the best time to "drop" it on a YouTube channel.

4chan's socio-linguistic practices – and the subsequent spillover on YouTube – render this platform a confined digital space where far-right individuals are free to celebrate what they consider to be the White ethnicity while dehumanizing assorted groups of immigrants by creating a disgust-based affective zone. In fact, on the one hand, 4chan ends up being a

far-right protected community solely inhabited by like-minded individuals. On the other hand, we see how the intrusion of foreign immigrant elements is necessary for disgust to emerge: pictures, videos, memes and racial slurs constitute some crucial ingredient of this affective atmosphere. In other words, by following Ahmed (2014) (section 2), I reiterate that disgust on 4chan operates as a contact zone between outside contagious agents and an inside safe space.

Contemporarily, however, my analysis highlights the pervasive modes by which 4chan far-right online environment invades the minds and shapes the emotional conduct of individuals: platform design architecture, portable devices, and user interactions carve out a setting that reaches into new members and impels them to conform their affective reactions to the disgusting atmosphere sanctioned in this digital domain.

5. Conclusion

The far-right and the Internet have always had an intimate relationship. Prominent right-wing figures have been early adopters of the advantages afforded by older Web services (e.g. forums). However, in this paper I pointed out that new digital platforms offer far-right groups the unprecedented possibility to implement a cornerstone of their political agenda, i.e. the creation of a constellation of closed White-only online communities deprived of the supposedly dangerous presence of migrants. The latter get framed as a life-threatening factor by recycling well-established disgust-based dehumanizing metaphors like the infamous comparison between migrant groups and rats. On the one hand, I argue that the prominent role of disgust – and the consequent migrant dehumanization – in far-right online spaces may be connected to the neurophysiological and motor components of this affective state. Disgust, in fact, has evolved as a disease-avoidance mechanism aimed to preserve the organism from coming in contact with contaminating pollutants. As a result, social disgusting elements considered menacing are thereby eschewed either by avoidance or by physical removal. On the other hand, I argue that disgust has a more pervasive role in the functioning and maintenance of far-right online groups. More specifically, I use the approach of situated affectivity and the concept of mind invasion to elaborate on the particular ways in which the socio-technical infrastructure of 4chan helps to mold a disgusting atmosphere conducive to the enculturation and transformation of new inexperienced members into functional recruits. Here, in fact, the social interaction dynamics and practices (e.g. inside thread competition; insulting slang acquisition; platform raiding) combine with platform design mechanisms (anonymity; ephemerality; loose moderation) to habituate users to a disgust-based and anti-immigrant affective environment.

My paper contributes to highlighting the affective structuring of modern far-right extremism while also showing its deep situated nature. In other words, I contend that, if we wish to understand the affective dynamics among right-wing users, we need to analyze the design components of different platforms, their ordering logics and the ways they organize

interpersonal relationships. My account provides a first attempt in this direction, and it invites future research to enrich it by broadening the scope of both the affective states to be examined – a focus on positive emotions like love could yield fascinating results – and the platforms to be considered. Each platform, in fact, possesses its own peculiar mechanics and a comprehensive understanding of how people use and moves between them would open interesting perspectives.

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11. *The self in the digital environment: reflections on the representation of human subjectivity on the Internet from a Peircean semiotic perspective*

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Abstract

The purpose of this chapter is to discuss the representation of human subjectivity in the digital environment and make brief notes on its possible social, economic, and political consequences in the light of ubiquitous computing. In fact, as we spend more time connected and different daily activities depend on the sharing of personal information on online platforms, the investigation of representations of the self becomes crucial for reflections on cyberpolitics. Based on Peirce's semiotics, we argue that self is a sign and its development is an instance of semiosis, which is the action of signs. Our analysis will be based on empirical observations on the functioning of the social network Instagram and on the observation of the data policy of this network. However, our considerations can be extended to other forms of representation of subjectivity in digital environments.

"We shape our tools and thereafter they shape us."

(Culkin, John. commenting on Marshall McLuhan's works)

0. Introduction

The *self*, an entity from which our conscious personal identity emerges, is essentially relational, dynamic, and social. The way we represent ourselves - that is, how we produce a self-image with invariance despite the continuous variation in our life experience - is the result of a complex network of relationships that we maintain with the world around us, including our memories of past experiences. Both psychology and anthropology are rich in studies that prove the representative, narrative, and social nature of the human *self.* More recently, researches have turned to the transformations of the *self* resulting from the new forms of socialization provided by digital platforms (Jacobsen 2020). In these new virtual environments, which are structured from flows of binary digital information and mediated by algorithms that influence users' choices with increasing power, the problem of the constitution of the *self* takes on new layers of complexity.

Here are some questions to be answered in the era of the digital self: How far have the filtering and recommendation algorithms of the big digital platforms taken control over the narratives from which our subjectivity emerges? To what extent does the need to encode information in binary digits and process them in Boolean algebra interfere with the possibilities to express our subjectiveness in digital environments? Are we able to control the representations of our *selves* on the Internet? Is the self represented in social networks

the same as the one we develop in our direct relationship to the world?

Concerning cyberpolitics, in particular, we must ask if the representation of our selves through proxies created by a menu of parameters designed to serve commercial interests (such as extracting private data from users, facilitating the prospection of their behavior patterns, and increasing the predictive capacity about their future choices) is amplifying cognitive phenomena such as confirmation bias, artificial clustering of social networks and insane polarization of opinions, preventing the building of collective consensus, increasing symbolic violence and, ultimately, tearing the fabric of democratic societies. To discuss these issues from the semiotic perspective our first step is to admit that the self is both psychic and logic. This means that cognitive phenomena such as perception, representation, and communication are the compositional axes of what we call, rather crudely, the self. More specifically, the self is a symbolic entity, since the symbol is the type of sign defined precisely by its ability to represent patterns, regularities, and relationships that make up the narrative of our conscious experience. Then must be considered how symbols are impacted by digital binary codification, the dynamics of the algorithms that rule the digital platforms, the role of the policies and interface design of these platforms in the construction of meanings and, last but not least, the interactions among subjects participating in this environment, considering the network structure that characterizes these virtual spaces.

1. Semiotics as general logic

Peirce's semiotics dismisses sharp divisions between body and mind, or spirit and matter, which are common in Western philosophy from ancient Platonic idealism to modern Cartesian mentalism. The semiotic self is not taken to be an epiphenomenon of neural networks, and thus a mere if comfortable illusion produced by electrical pulses from the human brain. Nor can the semiotic self be thought from the introspective *cogito*, nor does it depend on a transcendental synthesis of the "I" as the ultimate purpose of understanding, *a la* Kant. Peirce deviates from these nominalist and psychological solutions to adopt a fundamentally logical conception of the human psyche that is closer to Aristotelianism and scholastic realism. To be sure, Peirce's semiotics is not anthropocentric, since the centrality of the generation of meanings is in the action of the sign, called semiosis (CP 5.484)[1]. In other words, anthroposemiosis is only one of its multiple aspects alongside biosemiosis and even phisiosemiosis. Thus, he saw us, humans, as inserted in a web of meanings formed by the growth and reproduction of signs in nature, in which our selves are only one of the multiple layers. In this context, semiotics is the science dedicated to investigating the action of signs and the generation of meanings in general, having human culture as a particular branch.

1 CP is the usual notation to refer to the work The Collected Papers of Charles Sanders Peirce, edited by Charles Hartshorne, Paul Weiss & Arthur Burks, according to the references below. Likewise, EP is the usual notation to refer to the work The Essential Peirce, according to the complete references at the end of this chapter. The numbers on the left identify the edition volume, and the numbers on the right indicate the paragraphs. This notation is used because many of Peirce's texts were only published after his death, in books edited by scholars of his work. For further information, see https://arisbe.sitehost.iu.edu/.

On his way to define semiotic as the general logic that governs any conceivable mind, Peirce starts from a phenomenology based on three universal categories that he extracts from his studies of Kant. He called them firstness, secondness, and thirdness because they appear arranged as ordinals in a scale of complexity. Roughly speaking, firstness is monadic and concerns originality, chance, possibilities, qualities, spontaneity. Secondness, which is dyadic, is the universe of reaction, brute force, of the "here and now", of concrete existence. Thirdness, always triadic in nature, is the universe of intention, continuity, intelligence, regularity, law, purpose, mediation. It is in thirdness that the notion of Peircean sign is found as a medium connecting the represented object and the effect or interpretant:

As a medium, the Sign is essentially in a triadic relation, to its Object which determines it, and to its Interpretant which it determines. In its relation to the Object, the Sign is passive; that is to say, its correspondence to the Object is brought about by an effect upon the Sign, the Object remaining unaffected. On the other hand, in its relation to the Interpretant the Sign is active, determining the Interpretant without being itself thereby affected. (EP 2: 544)

Still applying his universal categories, Peirce then analyses the sign into three trichotomies: the sign as monad can be qualisigns, sinsigns, and legisigns; the sign in relation to its object can be icons, indexes, and symbols; and the sign as creating its interpretant can be rhemas, dicisigns, and arguments. We won't dwell on each of these minute aspects of semiotics but we must at least discuss the second trichotomy to arrive at a precise definition of symbols, and from them to the *self*.

2. Icons, indexes, and symbols

As a vicarious agent, the sign does not represent its object in all its aspects (which would make them indiscernible) but must select one or some of them. The icon selects qualities and for this reason, can represent only by resemblance, the index selects its material connection and thus can indicate it, and the symbol selects some general property, either naturally intrinsic or conventionally imputed, and such property that can be defined as a sort of habit.

The photo of a flower can be interpreted as an icon that selects the qualities of the object; the smell exhaled by the flower can be interpreted as an index of its presence in the environment; the word "flower", as a symbol, can be interpreted as representing a class of objects through habitual use or social convention. However, for the word flower to do its work it is required that its users have prior knowledge of what a flower is (comprehension of the predicates involved in the definition of that word), and be able to recognize the objects denoted by the word "flower" (the extension of the set of these objects). In other words, they have an iconic part (predicates that incorporate the seized information) and

an indexical part (everything they denote, expressing information). Symbols without icons are blind, and without indexes, they can see nothing in particular and are therefore useless.

Symbols are, by definition, the only types of signs capable of generating information, precisely because they synthesize icons where information is connoted with indexes where information is denoted. Within symbols, icons are responsible for understanding reality, while indexes are related to the extension, as discussed by Nöth (2012). Besides, symbols are teleological, that is, they are oriented towards the future:

A Symbol is a law, or regularity of the indefinite future. Its Interpretant must be of the same description; and so must be also the complete immediate Object, or meaning. But a law necessarily governs, or "is embodied in" individuals, and prescribes some of their qualities. Consequently, a constituent of a Symbol may be an Index, and a constituent may be an Icon. A man walking with a child points his arm up into the air and says, "There is a balloon." The pointing arm is an essential part of the symbol without which the latter would convey no information. But if the child asks, "What is a balloon," and the man replies, "It is something like a great big soap bubble," he makes the image a part of the symbol. Thus, while the complete object of a symbol, that is to say, its meaning, is of the nature of a law, it must denote an individual, and must mean a character. We speak of writing or pronouncing the word "man"; but it is only a replica, or embodiment of the word, that is pronounced or written. The word itself has no existence although it has a real being, consisting in the fact that existents will conform to it. (CP 2. 293).

Furthermore, to function fully in semiosis, the symbol needs to be materialized in a replica, or 'token', which is its instantiation in a given context (CP 4.537). Because of this logical form, symbols are not restricted to an individual mind but are spread across the culture in which they participate and their meaning is always a future condition: what would be a consequence of their belief. Hence Peirce's pragmatic maxim, according to which the meaning of a symbol is the sum of all the general consequences that would result from its adoption by a community of interpreters (CP 5.402).

3. The foundations of the semiotic self

Given the above, it is not surprising that Peirce was quite literal in stating that "man is a symbol" (CP 7.583). This does not mean that human beings can do without the materiality of the physical world. Quite the contrary: like any symbol, man must be embodied in a replica to be affected by sensitive experiences. By the shock and challenges of reality that often contradict his beliefs, we are forced to admit our ignorance about what is external to us. This friction with the real is our indexical part, what we denote as being the material objects to which we are connected (the extension). The feelings, sensations, and emotions produced by experience constitute our iconic part (comprehension).

The subject's semiotic approach indicates that the self is a "communicative agent" (Colapietro, 1989: 79) and, as such, is constituted from the other. It is from these frustrating experiences

in our day to day life that our self grows, develops, seeks answers, and shares them with others. It is precisely the awareness of the limitation before the real, the ignorance before nature, the weakness before the environmental forces that surround it, that recommend to the human being to abstract and generalize from the observed regularities, creating a niche of beliefs that constitutes the origin of our knowledge.

A child hears it said that the stove is hot. But it is not, he says; and, indeed, that central body is not touching it, and only what that touches is hot or cold. But he touches it, ignorance, and it is necessary to suppose a self in which this ignorance can inhere. So testimony gives the first dawning of self-consciousness (CP 5.233).

The human semiotic self, specifically, is the result of information internalized from our human perceptual and proprioceptive apparatus, originating in the images that make up our empirical phenomena. In this perspective, Waal (2006) recalls that the body functions as a medium between the *self* and the world, determining the unity of consciousness involved in the concept of self:

Since all interaction with the world is mediated through a single body, and since the mind is both an aspect of that body and a product of that body's interactions with its environment, the body can be seen as steering the mind to unity and singularity, including a unity of consciousness (Waal, 2006:153).

More than that, the semiotic self is the result of a continuous process of propositionally structured communication, that is, with denotative elements serving as logical subjects and connotative characteristics serving as logical predicates, while information is communicated to the self "in the future" that takes on the position of immediate self in the sequence, making the whole process slide smoothly over time:

A man indicates whatever is the object of his attention at the moment; he connotes whatever he knows or feels of this object, and is the incarnation of this form or intelligible species; his interpretant is the future memory of this cognition, his future self, or another person he addresses, or a sentence he writes, or a child he gets. (CP 7.591)

The logical predicates that make up the semiotic self are its habits of feeling, its aesthetic sensitivity from perceptual and proprioceptive senses. The logical subject of the semiotic self is its existential identity (in real space-time), where the clash against reality happens all the time. Consequently, semiotic information is the purpose that determines your actions, your future habits of conduct, your dreams, and your desires.

The *self*/symbol is an agent that generates our conscious subjectivity as it reflexively represents and interprets itself, producing both the sense of objective externality and that of subjective internality, as Colapietro states:

Our reliance on symbols is not primarily one on external means of communication or reflection. This reliance is rather constitutive: these symbols are integral to our being and, as a result, are constitutive of who we are. That is, symbols are not principally *external* means, but rather internal or constitutive features of our subjectivity and agency. (Colapietro, 2019 in Guarda, 2020).

As a sign, the *self* develops continuously through experience with reality, becoming more informed in a participatory society:

[...] according to the principle which we are tracing out, a connection between ideas is itself a general idea, and that a general idea is a living feeling, it is plain that we have at least taken an appreciable step toward the understanding of personality. This personality, like any general idea, is not a thing to be apprehended in an instant. *It has to be lived in time; nor can any finite time embrace it in all its fullness* . [...] But the word coordination implies somewhat more than this; it implies a teleological harmony in ideas, and in the case of personality this teleology is more than a mere purposive pursuit of a predeterminate end; it is a developmental teleology. This is a personal character. A general idea, living and conscious now, it is already determinative of acts in the future, to an extent to which it is not now conscious. *This reference to the future is an essential element of personality* . Were the ends of a person already explicit, there would be no room for development, for growth, for life; and consequently there would be no personality. The mere carrying out of predetermined purposes is mechanical. (Peirce, 1892: 556, emphasis added).

The meaning of our lives is, therefore, the sum of all our thoughts, achievements, actions, expressed feelings, etc., that survive in the common body and memory of our community. If the *self* "must be lived in time" as stated by Peirce, and if it is impossible to understand it in its entirety from an instant, what happens when it is represented in the digital environment? Here, it is worth noting that the constitution and development of subjectivity are mediated processes:

Our relationship to the world is *a semiotically mediated relationship* : we always think in signs and we come to be one with the signs on which we rely (they are not external means, but constitutive features of our semiotic consciousness). So, too, our relationship is technologically mediated and it is so mediated in a way that is inseparable from semiotic mediation. All of this points to forms of subjectivity and identity undreamt before the inventions and innovations of the digital age (Colapietro, 2019 in Guarda, 2020).

As the relationship between the *self* and the world is always mediated, the possibilities of representation and mediation brought by the digital environment are added to other forms of mediation inherent to the constitution of subjectivity: "Language is as much in us as we are in it, and it is in us because we are of it. What is true of a natural language can be equally true of various forms of technology. " (Colapietro 2019 in Guarda 2020). Thus, languages and other tools that mediate the relationship between the *self* and the world also become, to some extent, parts of that *self*.

4. The self in the digital environment

Representations of subjectivity in the digital environment work as ways of inserting the *self* in that environment. As the boundaries between online and offline fade, these representations play a fundamental role in contemporary processes of sociability, as it is through them that subjects participate in dynamics that include work activities, conversations between friends, buying and selling of the most varied items, bookings, updating of registrations in public institutions, etc. Representations of subjectivity can take the form of profiles on digital social networks, registrations on shopping sites, or proxies generated by private systems from the collection and crossing of information, among others.

Since the information and communication technologies created new dimensions for the social, political, and economic systems, the subjectivity narratives have become a valuable asset, since mastering them can mean a competitive advantage for companies and governments in this field virtually infinite.

At the same time, it is important to consider that subjects seek to represent themselves in the digital environment for reasons other than the interests of large companies. In this sense, we will make a discussion about these representations that take into account the dynamics, the logic, the interactions, and the intentions of the different actors involved. To make our contributions clearer, we use examples from the social network Instagram, based on empirical observation and analysis of its data policy.

First, we point out that the representations of subjectivity are not the *self* in its entirety, but fragments of it. These representations are identities, according to Wiley (1994). While the *self* is a semiotic process in constant evolution, identities are circumstantial and emerge from that process. Therefore, "good identities are the overall self's bridge to the world. But if the identities are uncongenial to the person, psychologically or socially, they can create blockages between contents and structure [...]" (Wiley 1994, 36). Now, we know that a subject can have different identities or representations of himself. In this sense, the discussion about the representations of subjectivity in the digital will help to unveil under what circumstances they can function as bridges or walls for the *self*.

Second, it is important to highlight that the digital environment is symbolic par excellence since all the information contained in it goes through a process of coding in computational language. It is this process that allows information to be subsequently viewed as photos,

videos, sounds, texts, memes, hashtags, etc., based on translations operated by interfaces (such as those on social networks and other sites), and materialized through computer screens, *smartphones,* and *tablets*, among others. Thus, any representation of subjectivity in the digital environment is inscribed and can only emerge from coding in computational language. However, there are other variables that affect the creation and circulation of meanings, such as the complex interactions between different languages and codes, the interconnected actors, the possible economic and political interests of companies and governments, etc. As we highlighted earlier, in Peircean Semiotics meanings emerge from the relationships between signs. In this sense, it is necessary to recognize the continuity between signs of different natures and their impacts on representations of subjectivity. Finally, we note that the reflections on the representations of subjectivity in digital should also consider the interactions and participatory processes in this environment.

Let us start, therefore, with an overview of the aspects that involve the coding of the digital environment. Manovich (2001: 27-28) clarifies that these environments, which he calls "new media", are formed by objects composed of digital codes, that is, numerical representations that can be described mathematically. In this sense, these representations would be programmable databases. Despite the neutral character, these databases are created and valued according to certain criteria and worldviews:

Categorization is a powerful semantic and political intervention: what the categories are, what belongs in a category, and who decides how to implement these categories in practice, are all powerful assertions about how things are and are supposed to be. " (Bowker; Star, 2000, *apud* Gillespie, 2014: 171).

From this perspective, we observe that the actions carried out in the digital environment are subject, from the beginning to the bias and logic created by those responsible for coding this environment.

For Manovich, the database is a new genre of culture, in that, unlike narratives, data collections have no linear sequence and can be accessed, crossed, and correlated in various ways. But, for this mechanism to work, the action of the algorithms is also necessary. According to Manovich, "together, data structures and algorithms are two halves of the ontology of the world according to a computer" (2001: 223). According to Gillespie, algorithms are " [...] encoded procedures for transforming input data into the desired output, based on specified calculations" (2014: 167). That is, they function as filters that select and group certain data according to previously defined objectives, interfering in the way information circulates in the digital environment.

Gillespie (2014) warns that the increase in the use of algorithms in the selection of information that supposedly should be considered more relevant to people requires the observation of the human and institutional decisions that are behind them, because,

[...] as we have embraced computational tools as our primary media of expression, and have made not just mathematics but *all* information digital, we are subjecting human discourse and knowledge to these procedural logics that undergird all computation (168, italics by the author).

The preparation of data so that it can be later found, crossed and selected confirms the non-neutrality of the digital environment and the different platforms on which it is possible to represent subjectivity. To get an idea of how this happens, we point out that corporations such as Google, Facebook, Amazon, and Microsoft use algorithms to select and classify information that passes through their services and thus accomplish what Pariser (2011) calls "personalization" of the contents that will be delivered to each user.

Based on personal information offered voluntarily by users and navigation trails collected by the platforms (such as location and searches performed), these companies analyze the supposed preferences of each person and, with this, make predictions about their next choices. Besides, based on these profiles, the systems determine the content that each person should receive according to their supposed beliefs and tastes, generating the so-called "filter bubble", in which people with similar opinions and profiles tend to receive similar content (Pariser, 2011: 9).

This personalization mechanism points to an attempt to generate representations of the *self* that are aligned with the economic objectives of companies, since the framing of the *self* to certain parameters facilitates businesses such as sales of personalized ads, among others. An example of this can be seen on Instagram, Facebook's social network. In its data policy (Instagram, 2019b), the company informs that it stores data included voluntarily by the user and also data and metadata collected continuously, from the moment the user creates an account. This data includes location, device brand, operator, people with whom the account owner communicates, and interactions carried out on the profile, among others. With this information, the network makes inferences about who that person is, that is, it creates a kind of representation of the subject, to which certain meanings are attributed: " We connect information about your activities on different Facebook Products and devices to provide a more tailored and consistent experience on all Facebook Products you use, wherever you use them "(Instagram, 2019b).

Additionally, the so-called "filter bubble", created by trying to make predictions about the personal tastes of users of these platforms, can contribute to narrowing the possibilities of subjectivity narratives, since the subjects are exposed mainly to information aligned with their own beliefs and habits, while conflicting information, which could promote a clash with reality, lose space. Although it does not quote the word "algorithm", Instagram indicates that it selects content and subsequently personalizes the user experience, thus directing the content that each person will have access to. Subsequently, the information collected and processed is used in the company's business: " We use the information we have to deliver our Products, including to personalize features and content (including your

News Feed, Instagram Feed, Instagram Stories, and ads) and make suggestions for you [...] "(Instagram, 2019b).

Floridi (2014) indicates that information and communication technologies contribute to an overvaluation of digital. Thus, as people stay connected for a longer time, the sensitive experience loses space and, instead of corporeality, what the author calls "typification of individuals" appears (2014: 57), a process in which people go through to conceptualize according to patterns or molds, such as gender, religion, education, etc. This process is fueled by the constant adjustment of the subjects' self-representations to the pre-defined parameters of the networks, which can gradually exclude the particularities of each *self*. This context leads to what Floridi (2015) calls " proxy culture", in which representations in the digital environment become empty symbols, with no connection with reality:

[...] a proxy culture may become an ersatz culture, in which proxies become mere surrogates that not only hide their original references (the 'real' coffee) but make it hard or even impossible to reach it because they fully replace it without any residual link to an alternative reality. A world in which there is no chicory coffee is not a better world, but a world in which there is only chicory coffee is a worse, shallower world (Floridi, 2015: 490).

In other words, the so-called *proxies would* not only represent their objects but would act in their place, in a process that would lead to the detachment of the sensitive experience in favor of the repetition of digital patterns.

Computational syntax, on the other hand, is based on parameterization based on Boolean logic. Continuous predicates are discretized and represented numerically and quantitatively. For example, thermal sensations that can be experienced analogously in a continuum between extremely hot or extremely cold, in the digital environment are transformed into numerical scales (of a thermometer, for example) and / or discretized attributes such as hot = 0 and cold = 1. This implies the strict adoption of the Principles of Identity and the Third Excluded from Aristotelian Syllogistic, which divides the universe into two parts, creating a dichotomy in which the two parts are "mutually exclusive". In practice, this means that the parameters created in digital in a way could simplify the possibilities of representing subjectivity. When parameterization occurs on less relevant psychological, sociological or anthropological phenomena (such as the thermal sensation experienced by an individual in a given situation), the problem seems less. But it is enough to project this reduction to more complex issues, such as gender representations, personal satisfaction in work relationships, family happiness, or cultural belonging, so that even small deviations in representation will produce, over time and social dynamics, catastrophic imbalances.

This parameterization of subjectivity allows the tracking and classification of subjects based on data, that is, their transformation into marketable merchandise:

Digital platforms are the technological means that produce a new type of "social" for capital: that is, the social in a form that can be continuously tracked, captured, sorted, and counted for value as 'data'. Platforms are a key means whereby the general domain of everyday life, much of it until now outside the formal scope of economic relations, can be caught within the net of marketization. (Couldry; Mejias, 2019: 341).

The use of technological tools for the production of sociability that serves the market tends to lead to the creation of representations of subjectivity that work as walls for the self, since they seek to cast it into categories and evaluations based on data from the past, ignoring thus, that the self is a process.

Since the representations of subjectivity are mediated by codes and algorithms, it is clear that the *self* cannot control all the possibilities of representation and meaning arising from these systems. However, codes and algorithms cannot determine the representations of subjectivity alone, since the digital environment is a dynamic and somewhat unpredictable space, formed by different signs and actors, affected by culture and different interests. Here, it is worth highlighting the network character of the digital environment, insofar as it constitutes a structure that enables communication flows and connects different actors. Concerning the concept of network, Pierre Musso (2013) points out that "the network is an unstable interconnection structure, composed of elements in interaction, and whose variability obeys some functioning rule" (Musso *in* Parente, 2013: 31, our transl.). To defend a philosophy of the network, Musso (2013: 34) also clarifies the ambivalent character of the concept of a network over time, since the network can allow circulation and freedom or surveillance and control. In this sense, thinking about the narratives of subjectivity in the digital environment requires a willingness to understand the functioning of the networks that compose it as structures in constant movement.

After briefly discussing codes and algorithmic programming, we now move to the interface layer, in which subjects participate by exchanging signs of different natures and building their representations. Within the logic of the current production system, the subjects' digital self-representations are encouraged as artistic expressions and as a supposed way of revealing their uniqueness. In the so-called "artist capitalism", a term defined by Lipovetsky and Serroy (2016), aesthetics and art are used to maximize consumption and profit. This new stage of the economic system is based on the imaginary, on the immaterial, and the dream, on the encouragement of individual expression, and on the valorization of themes such as personal fulfillment, quality of life, entertainment. In this sense, "[...] the rational pursuit of profit is based on the commercial exploitation of emotions through productions of aesthetic, sensitive, distracting dimensions." (Lipovetzky and Serroy, 2016: 43-44, our transl.). As these authors point out, the economic system seeks to include other spheres of life in its functioning, using, for this, sensitivity and emotions. If before labor and consumption relations were the main target of capitalism, today several aspects of personal

and intimate life can become commodities, even subjectivity itself.

Considering corporate motivations, the creation of self-representation in the digital environment is stimulated by appeals that relate success to self-exposure. This type of speech is endorsed by companies that profit from the logic of the exhibition. For Marc Zukerberg, owner of Facebook, anyone who has more than one identity is dishonest.

"You have one identity […]. The days of you having a different image for your work friends or co-workers and for the other people you know are probably coming to an end pretty quickly. […] Having two identities for yourself is an example of a lack of integrity. " (Zuckerberg quoted in Kirkpatrick, 2010: 199).

To guide representations of subjectivity in line with corporate purposes, companies like Facebook encourage their users to follow the network's best practices. In the excerpt below, taken from the Instagram website, the social network suggests ways to build an "online presence" and attract an audience:

Amplify your voice: Posting across multiple surfaces increases your likelihood of being discovered by new audiences. Share your highlights and favorite moments on Feed. Give a glimpse into your everyday life with Stories. Interact with fans in real time by going Live. Go deeper with your audience by sharing longer videos on IGTV (Instagram, 2019a).

In other words, everything must be shown and compiled into a homogeneous, flat and available self-representation. As Han (2015) points out, the idea of transparency refers to the operationalization of actions, which would allow them to be calculated and controlled. In this case, disclosing more about one's own subjectivity means providing the necessary personal information so that the systems of these networks are continuously improved, bringing advantages to their controllers. In this perspective, there would be coercion of the subjects to expose themselves more and more and become, themselves, parts of the system, in a movement in which "everything must become visible. The imperative of transparency suspects everything that does not submit to visibility" (Han, 2015: 13).

Thus, representations of subjectivity that are based mainly on the values and guidelines of the economic system and large corporations and seek only to replicate them can also become obstacles to the self, since they would not reflect all its particular characteristics, but would only emulate patterns predetermined and would function as symbols disconnected from reality.

Despite the power of the different controllers of the web interfaces and the discourse of the current economic system, we understand that the self also plays an active role in the construction of its representations in digital, since it is a "communicative agent" (Colapietro, 1989) . The subjects who participate in the dynamics of digital environments are called "web actors" by Pisani and Piotet (2010), because:

Instead of simply receiving, we produce, publish, act. Active users, we are consumers / creators, readers / writers, listeners / writers, viewers / producers. We even have the power to organize all of this data (information, knowledge, creations), giving them tags of our creation, tags. We generate content, which we organize and modify every moment (Pisani; Piotet, 2010: 120, our transl.).

This condition of "web actors" is made possible by Instagram, since the network offers options for any user to act simultaneously as a producer and consumer of content, interfering in semiotic flows in several ways: in addition to publishing photos, texts and videos, it is possible to comment, like content, share, send private messages, follow other profiles, follow *hashtags* , etc.

Thus, based on personal motivations, we understand that the *self* can appropriate and rearrange digital spaces in favor of building representations that are more aligned with its desires. Furthermore, even in the case of Instagram, the possibilities of communicational exchanges between users also contribute to the processes of representation and creation of meanings. These interactions, such as comments and likes, are capable of interfering to some extent in the logic of the network, modifying, for example, the programming of algorithms and enabling new unpredictable meanings, since they are marked by chance. Ultimately, however, Facebook, the corporation that owns this network, has the power to reprogram and modify the dynamics of this virtual space according to its interests. As the Instagram data policy (2019b) suggests, the interactions of a profile on the network are used as a parameter for the distribution of its publications. Thus, the more interactions the profile obtains, the more it will be evaluated as relevant within the criteria of Instagram and, therefore, its publications will be displayed to a greater number of users . In this perspective, Instagram highlights that "having a community involved is fundamental to success on Instagram. Interact with fans using Stories, feed, IGTV and Live to keep the conversation going" (Instagram, 2019a).

Recuero (2012) points out that communication mediated by the computer and social networks on the Internet allows texts, images, videos and audios exchanged in these environments to become perennial and contribute to building the presence of subjects in the digital - that is, also if constitute as representations of the subjectivity of its participants. In this sense, she says that social media profiles are conversations:

We can say that they are constituted in conversations in "network" insofar as they are constructed and adapted through exchanges built with other actors, the values that are negotiated and the meanings that one wishes to build. These profiles, therefore, constitute statements that focus on the basic question of the identity of the actors. Proposed by them, the statements are legitimized or not by the network and are adapted, through these symbolic exchanges (comments, interactions and even the perceptions of the profile author), in order to delimit and perfect the idea that is intended to be constructed by the statement (Recuero, 2012: 142-143, our transl.).

In environments of digital social networks, the exchanges and reactions of different actors to the published content (such as the actions of liking, commenting and sharing) help to modulate the narratives of subjectivity, promoting the development and updating of the symbols present in the digital.

We understand that self-representations and representations of subjectivity are only constituted as such to the extent that they are subjected to experience and exchanges. Thus, the self that emerges in the digital, as one of the possibilities of representing subjectivity, does not mean a threat to the self-expression of the semiotic self. A self-representation created through an Instagram profile, for example, can become a bridge through which a person can express himself and make exchanges with subjects who are miles away in a few seconds. The possibility of creating a representation of yourself on a website dedicated to the production of petitions can help people to mobilize for a common cause.

However, it is important to remember that the self, as a sign, can only have all its potentialities developed in a conditional future, through interactions and experience. That said, the imposition of representations of the self in the digital environment as substitutes for the semiotic self can have disastrous consequences for society and for subjects. In this perspective, it is important to note that the role that digital environments have been assuming in contemporary sociability processes points to the need to assess in depth the mediating mechanisms between the self and the world so that they do not obstruct the possibilities of self expression nor limit their experiences, nor condemn subjects to standardized and disconnected representations of themselves.

5. Final considerations

As the mediating processes are part of the constitution of the semiotic self, it is worth noting that the representations of subjectivity in the digital certainly also influence and are part of that self. In a world in which online and offline merge, there is no doubt that the narratives of subjectivity in digital reverberate in the material world and cannot be dissociated from it. Thus, for the representations of subjectivity to be aligned with the self as a unit in process and to function as bridges between the self and the world, they need to be open to constant updating.

Static representations of subjectivity, which refer only to other symbols and seek to imprison the *self* , are doomed to hollowness or, even worse, to misuse, with damage to the subjects represented and to society as a whole. It is important to highlight that the representations of subjectivity in the digital are circumscribed to codes created for marketing purposes and that contain biases that interfere in the senses that will be generated. In addition, the representations are always based on data collected in the past and, however new information may be inserted, they cannot capture all the dynamism and particularities of the self. In this sense, no representation of subjectivity can be taken as a substitute for the semiotic self.

Another implication of representations of subjectivity on the Internet is related to the polarization of opinions . To make this point clearer, take as an example the extraction and processing of user data collected by large platforms, which are later used to model profiles and make predictions about tastes, behavior patterns and opinions. The use of these profiles, as representations of subjectivities, as a basis for personalizing the user's experience in the virtual world tends to limit the exposure of subjects to content supposedly aligned with their predilections, as Pariser explains (2011). Over time, this mechanism can reinforce certain opinions and beliefs that, without being shocked by diversity , tend to become polarized, with the possibility of disastrous results in areas such as politics. Ultimately, this trend can lead to dystopian representations of reality (Guarda; Ohlson; Romanini, 2018).

From the point of view of the self-representations that the subjects make of themselves in the digital environment, we highlight that they can only be conceived through interactions with other subjects and through the intertwining between the different signs involved in the semiosis process. Thus, we point out that the self does not have total control over these representations, although it is important to consider a certain autonomy of it in the face of the processes of construction and sharing of meanings. On the other hand, if the subjects seek to align their self-representations to the standards and expectations of the platforms, this could lead to a trend of standardization of representations, since they would be adjusted not with the intention of seeking a representation aligned with the particularities of the self, but to rules external to it.

Since the *self* can only communicate with the world through signs, as Peirce postulates, it is clear that it cannot be completely dissociated from its representations. Therefore, it is worth remembering that the representations of subjectivity in the digital context are permeated by processes unrelated to the subject's action, such as the collection and treatment of data and the selection made by algorithms. In this sense, the trend towards the standardization of digital identities, stimulated by platforms through the imposition of categories to which the representations must adapt, among other marketing strategies, can lead to impacts on the constitution of subjects that exceed the limits of the virtual environment and may interfere with your habits and conduct.

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12. *Rootless Users? Ownership, Access and Culture*

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Abstract

To study culture in the sense of 'cultural heritage'—of museum pieces and traditional practices; of stately homes and sacred sites; of local folklore and national legends—is to find oneself in the midst of myriad claims to possession. Voluminous literatures, scholarly and otherwise, have sprung up around concepts of 'cultural property' and 'cultural appropriation'. Demands for the 'repatriation' of artefacts to their countries of origin generate solemn discussion in political and academic circles.

Indeed, some nations' governments seem far more interested in retaining artefacts within their borders than in the movement of people, as though responding to an age of global mass migration by placing a redoubled emphasis on symbolisms of nationality. This is simultaneously a time of fascination with both 'cultural patrimony' and 'virtual citizenship'.

To enquire into culture as it has developed through the mediating influences of the Internet, conversely, is to encounter frequent emphasis on the borderless and unregulated, on the unowned and often the ultimately unownable. Struggles over the scope of copyright, the major legal instrument by which proprietary control is exercised over the spread of culture, gave rise to the Creative Commons movement. Lawrence Lessig would write books examining 'free culture' and 'remix culture'; 'Weird Al' Yankovic would contribute to the musical culture of that era with 'Don't Download This Song'.

Substantial balkanisation of online communications by national governments, of which the 'Great Firewall' of the People's Republic of China is the most prominent example, is a relatively recent and enduringly controversial phenomenon. Online communities routinely develop internationally around the most obscure of shared interests. As the webcomic xkcd puts it: 'Human subcultures are nested fractally. There's no bottom.' There is even a scholarly literature on the video game phenomenon of 'virtual worlds', artificial social spaces with fantasy geographies all of their own.

It is therefore very easy to be struck by the impression that here one encounters two faces of culture: one pulling towards proprietary control and national regulation, with deeper roots in the physical world and the time before computerisation, and another kindled into life by the early public Internet, for which in some sense all governments are foreign and all borders imaginary. Yet it remains arguable that both owe something to the same philosophical traditions of thought. Liberalism, which via John Rawls inspires Will Kymlicka's work on 'cultural rights' and minority peoples in multicultural societies, is also identified by E. Gabriella Coleman as a crucial influence animating hacker culture and the Free/Open Source Software movements.

This essay pursues the moral philosophies that undergird human claims on culture and how culture matters. It examines how and whether such a philosophical underpinning must respond to the novel influences of connected technologies on how modern humans now understand themselves to belong to cultures and cultural heritages to belong to them. In so doing it asks how great the gulf really

is between an online 'virtual world' and a world in which nations seek to construct and sustain themselves through symbols and stories and reliquaries of their pasts.

0. Introduction

In 2001 an economist at California State University presented a working paper 'based primarily on the author's personal experiences while traveling and gathering data' (Castronova, 2001: cover page) in a 'new world [...] populated by an exotic but industrious people' (ibid: abstract). The plot twist came soon enough: the paper offered 'a first-hand look at the people, the customs, and especially the economy' (ibid: 2) not of any discrete geographical region on Earth, but of a Massively Multiplayer Online Role-Playing Game with players from around the world. This was an early example of what would become the research field of 'virtual worlds' or 'synthetic worlds'. Before economic examination of the MMORPG's productivity and its currency exchange rates, however, came a passage presented as an excerpt from a journal:

All around I hear the sounds of footsteps and I see humanoids of various shapes and sizes running back and forth, names like "Zikon" and "Sefirooth" over their heads, wearing odd costumes, carrying strange implements. [...]What should I do? I feel the presence of humanity, but I suddenly feel like a stranger in a very foreign culture. I become afraid of breaking some taboo, of making a fool of myself (Ibid).

When grappling with new technologies and their social implications, people naturally draw on more familiar situations (and though 'virtual worlds' technically have a lineage stretching back to the Multi-User Dungeons of 1970s mainframes, in 2001 the 3D vistas of *Everquest* seemed a new and newly popular thing). What therefore came to the fore was not the technology that made this New World possible, the details of texture mapping and input devices and network latency, but the disorientation that afflicts anyone who has stepped into an unfamiliar culture: a new school, a new workplace, or a foreign country far away from home. Online communities, and the ways in which participants and researchers have approached them, emerged within a world in which it is already broadly understood that there are countries with myriad cultures and even national stereotypes.

Indeed in many respects online cultures such as this 'new world' have mirrored and extended cultures of the older world which human beings have always inhabited IRL ('in real life'—the term 'meatspace', contrasted with 'cyberspace', never entirely caught on). Language barriers are as stark in text as face-to-face: that it is so easy to visit foreign parts of the Web only reinforces how many of them there are and how different from each other in their distinctive customs. A visitor learns by observation how the French have their #ironèmes and Japan laughs with a string of Ws. Even emoticons have geographical homelands, although they more easily spread and mingle—which is ^_^ for those with

such rich options for expression at their fingertips, though a little 🄰rz for the bewildered debutant trying to make sense of it all.

There is one experience in particular which abruptly reminds people of geography's influence on culture and its online distribution. This is the experience of requesting a page from a server far across the planet, and within seconds receiving a response along the lines of *This content is not available in your country*.

Online culture is thus Janus-faced: it brings forth new 'synthetic' worlds, whilst inheriting its economic, legal and regulatory borders from the older offline world of nation-states. The global Internet brings together people from across the planet in a glorious tangle of polyglot conversation, but also highlights the ways in which culture is not a cosmopolitan free-for-all: the ways in which it is subject to proprietary and even political controls. Information proverbially wants to be free, but culture is accustomed to being owned.

1. Cultural Property

There is nothing unexpected or outlandish in the thought that bits and pieces of culture may be subject to proprietary control. A copy of a novel, for example, may belong in one sense to literary culture and in another sense, that of legal property, to an individual or a library. The same is true of paintings, buildings and all manner of other things. If what is meant by 'culture' is not merely 'high culture' or 'the arts' but quotidian ways of life then whatever passes through peoples' hands is in some reasonable sense cultural. (Even if you pick up a rock while out on a walk in the countryside, the culture to which you belong will inform the practice of taking countryside walks and the conception of a natural world by means of which you consider the rock.) The extent to which one consciously thinks of this novel as culturally significant will usually differ between a mass-market paperback and a rare first edition, and between an 'airport novel' and a work of high-minded literary fiction, but in no case is the book's status as an item of property in doubt.

People are also familiar with the idea that the novel will be subject to rights of *intellectual* property (of which more in the next section): that unless its copyright has expired, there exists a legal monopoly on making further copies. This is another way in which cultural production and distribution are subject to proprietary controls.

Yet *cultural property* is a subject distinct from these, and less widely familiar; although people are likely to recognise its less legalistic counterpart, *cultural heritage*. ('Cultural patrimony' is also in use.) Some disputes achieve fame: it is well known that an ever-rumbling debate centres on the 'Elgin' or 'Parthenon' Marbles on display in the British Museum and whether they should be sent back to Athens, from which they were removed during the Ottoman era. Meanwhile, in recent times it has become popularly fashionable to talk about the 'cultural appropriation' of everything from styles of clothing to haircuts to cuisine, though usually with the enthusiasm of the well-meaning activist instead of the precision of the scholar.

To study culture in the sense of cultural heritage—of museum pieces and traditional practices; of stately homes and sacred sites; of local folklore and national legends—is to find oneself in the midst of myriad claims to possession. Whose culture is involved will vary: there are cases like the Marbles', involving nation-states and national culture, and there are many cases which involve indigenous and other minority groups within a given nation. Sometimes questions of cyberculture involve the latter: for example, Microsoft found itself in a dispute with Chilean Mapuches after it decided to translate its software into the Mapuzugun language, resulting 'in a legal battle which raises the question of whether anyone can ever "own" the language they speak' (Long, 2007).

Not surprisingly, however, in the global politics of cultural property it is commonly the influence of nation-states that looms largest. Invoking national cultures and the heritage of their territories gives nations a special interest, implies the attribution of national character to objects, independently of their location or ownership, and legitimizes national export controls and demands for the "repatriation" of cultural property (Merryman, 1986: 832).

The claims of cultural property can be at odds with the ordinary entitlements of private ownership, and different nations resolve conflicts in different ways: an Italian law forbids the export of any book printed more than fifty years ago (Pregliasco, 2015), whereas the United Kingdom seldom places an unconditional export ban on anything, but sometimes delays the export of historically or aesthetically valuable objects while money is raised to 'save' them 'for the nation'. Other legal constraints on private ownership may concern upkeep, obliging the owners of culturally significant buildings and so forth to maintain them without major alteration. Of course, legal and regulatory regimes constrain what private owners may do with their property in various ways and for a number of reasons, most of them unrelated to culture: safety, for example, is another concern of building maintenance. What makes culture distinctively interesting is its role in nations' self-conceptions. This is most obviously so in the thought of ethnic nationalisms, for which a sense of shared identity comes first and the drawing or redrawing of national borders follows accordingly. Yet a sense of shared identity is of at least as great an interest to multicultural states, which have reason to present themselves as more than mere marriages of convenience in order to maintain their integrity and prevent societal fragmentation.

2. 'Save the Meme!'

The emergence of the public Internet has meanwhile brought forth its own implications for culture and how culture is thought about and fought over. To enquire into culture as it has developed through the mediating influences of the Internet is to encounter frequent emphasis on the borderless and unregulated, on the unowned and the ultimately unownable.

In June 2018, while this chapter's first draft was being written, a political campaign was underway called 'Save the Meme!' Memes are those catchy little snippets of language and imagery that lend themselves so well to reposting and remixing as they spread across the Internet: e.g. someone stumbles upon a subtitled frame from an old anime in which a character seeing a butterfly asks, 'Is this a pigeon?'—and from this source burst forth remixes until myriad variations on 'Is this a...?' have been explored. The target of the campaign was a copyright directive due to be considered by the European Parliament: 'Europe wants Internet companies to filter all of your uploads. [...] An upload filter can't recognise your legal use of copyrighted content' (Save the Meme, 2018). Not for the first time, the freewheeling remix culture of online conversation had come into collision with the proprietary interests of commercial copyright.

In his *Remix* Lawrence Lessig draws a distinction between Read/Write (RW) and Read Only (RO) culture. In a RW culture ordinary citizens "read" their culture by listening to it or by reading representations of it (e.g., musical scores) [and moreover they] add to the culture they read by creating and re-creating the culture around them. [...] Culture in this world is flat; it is shared person to person (Lessig, 2008: 28).

In contrast, RO culture is 'less practiced in performance, or amateur creativity, and more comfortable (think: couch) with simple consumption' (Ibid).

Never before in the history of human culture had the production of culture been as professionalized. Never before had its production become as concentrated. [...] The twentieth century was the first time in the history of human culture when popular culture had become professionalized, and when the people were taught to defer to the professional (Ibid: 29).

The point of the dichotomy is not an unsubtle insinuation that RW culture is pure and good, RO corrupt and bad. Creative professionals and their supporting industries have brought forth many marvellous things and made them available to many satisfied customers (ibid: 30–31). Rather, Lessig's concern is that intellectual property law has become so slanted towards the proprietary interests of RO culture that it threatens to strangle RW culture, just as the Internet has made possible a glorious new era of RW cultural creativity (ibid: 33). Indeed, sometimes a heritage of RO culture is also ill served by existing legal regimes: in his earlier *Free Culture* Lessig notes that by the time the copyright on early films expires, they 'will be gone, and the metal canisters in which they are now stored will be filled with nothing more than dust' (Lessig, 2004: 225).

As that observation hints, disputes about the proper scope and duration of copyright are older than the technologies of the Internet age. Since copying data around the world is what the Internet fundamentally does, however, tensions and controversies have repeatedly

emerged that resemble a tug of war between what connected technology makes possible, the sharing of text and sound and images on the grandest scale ever witnessed, and what copyright law is designed to enforce, the ability of copyright holders to act as gatekeepers so that they have an opportunity to be remunerated.

A copyright regime is justified not by serving private interests in remuneration, but by serving public interest in encouraging creative works to be brought forth. Ample creativity exists and has always existed outside the realm of commerce (and in some cases under patronage), but the possibility of remuneration makes possible occupations and enterprises from the full-time novelist to the film industry. It may bring Art down to the level of a commodity in the market, but by doing so it lets participants in that market reward the creation of works that meet with their approval. The possibility of being so rewarded is what creates an economic incentive to produce and distribute works that would otherwise not have come into existence.

This explains why copyright defensibly exists: if you are writing a novel for Art's sake alone, say, then you may be delighted to know that with modern technology it is easier than ever for anyone to help distribute it far and wide. If you are writing for money, however, then you will have a different attitude towards people who can create or obtain a copy of your work without paying you for the privilege. A limited monopoly on copying is a means of addressing this problem: if people think your work is good enough to merit the asking price, you will get paid per copy, and it is the prospect of receiving that money that sustains your incentive to write your novel in the first place, rather than depriving the world of it as you lay the project aside and go off in search of some other source of income.

Crucially, the monopoly is a limited one. (This is where intellectual property is quite noticeably different from regular property. If you own a chair, say, you will reasonably expect to keep owning it until you sell it, or give it away, or ultimately die and thereby pass it into the possession of any inheritors.) The ideal duration of copyright is precisely long enough to make it commercially viable to create and distribute a given work, thereby ensuring there is an incentive to create it in the first place, and no longer. A longer lifespan for copyright will serve private monopoly interests of RO culture, but at the expense of the RW culture known as the 'public domain'. Works that have fallen out of copyright and into the public domain can be not only copied without restraint but also remixed and built upon by other and newer creative works.

The preceding paragraphs broadly summarise the dominant and most successful tradition of thought about justifying copyright, particularly in the Anglophone world. There have also been attempts to ground intellectual property in something like John Locke's theory of ordinary property—Locke himself was not a 'Lockean' in this respect. For a comparative discussion see (Hettinger, 1989). There is also the tradition associated particularly with continental Europe, which places a strong emphasis on the *droit d'auteur* or 'authors' rights', and is sometimes viewed in light of Hegelian ideas about property as a sort of expression or development of the self: on this see (Hughes, 1988: 330-350). For a comparison of Anglophone and continental legal traditions concerning copyright see (Goldstein, 2003).

The remainder of this essay does not draw on these alternative theories of justification.

With not only art and culture but money at stake too, the history of copyright and the Internet has been one of repeated controversy. In 2018 these tensions gave rise to 'Save the Meme!' In 2014 Swedish police seized the servers of a file sharing index site provocatively named The Pirate Bay; in 2012 a file hosting service called Megaupload had been shut down and its owners arrested. In 2007 a mother made a home video of her baby spontaneously dancing to the music that was playing in the background: the video found fame not for its cuteness but because the owners of that music had the video taken down from YouTube (Lessig, 2008: 1–2). (This legal case was finally resolved more than ten years later (McSherry, 2018)). In 2006 the controversy concerned peer-to-peer file sharing software and the use of heavy-handed lawsuits to deter infringement of copyright on music: 'Weird Al' Yankovic satirised the phenomenon in his own music with 'Don't Download This Song'. In the same year, in Sweden, the first example of a new kind of political party was founded: a Pirate Party (Anderson, 2009).

3. Cultural Commons

Both cultural property and intellectual property are large and complex topics with entire literatures devoted to their various nuances. For the purposes of this essay, however, what they primarily represent is the context within which online culture came into being: a world in which culture was widely understood as something capable of being subject to claims of ownership.

'Culture' is itself a notoriously flexible term, and had been split every which way into 'high' and 'low' and 'popular' and 'folk' and numerous other kinds of culture well before the Internet came along. Thus Beethoven's Fifth Symphony, for example, falls under the heading of culture: in fact it falls under multiple such headings, such as German culture and European culture and Western culture and the culture of classical music. A performance of the symphony is also an item of culture, and so is a recording of the performance. A reference to the symphony in *The Hitchhiker's Guide to the Galaxy* ('Desperately he grabbed for the only bit of culture he knew offhand – he hummed the first bar of Beethoven's Fifth') further propagates its cultural significance, as in turn does this very act of quoting it in the course of discussion.

Even all this, however, comes nowhere close to exhausting what can be said about culture, particularly culture in its more anthropological usages. The way you swear when you stub your toe is cultural, both for what it reveals about vernacular language and because the act of cursing depends on a culturally contingent understanding of the taboo. Cultural expectations govern when people feel comfortable making eye contact or feel their personal space is being invaded. Culture in such senses, culture as a group's shared understandings, permeates human experiences.

This very flexibility of the term is not always transparently helpful when it comes to teasing

out questions about *whose* culture is involved and what it might mean for culture to *be* anybody's. It is very obvious that nobody can possibly own the way in which one refrains from eye contact when standing in a lift with strangers. (Nobody even owns the usage of 'lift' rather than 'elevator'—a well known difference between British and American English.) It is equally obvious after even cursory investigation that there is at least one owner of the copyright on *The Hitchhiker's Guide to the Galaxy*. Between these two anchor points of happy obviousness, however, lies a whole spectrum of murkiness. Nobody owns the copyright on a work as old of Beethoven's Fifth (though a recording of a specific performance can be another matter), but might it belong in some other, less legalistic sense, to German musical heritage or to the Western canon or even to humanity as a whole?

Belonging to humanity as a whole is not equivalent to belonging to nobody at all. What is unowned is potentially available for anyone to appropriate; what is owned commonly or communally by everybody must be shared. Moreover, when one asks who has what duties of care towards something, the answer is likely to draw on an understanding of whether anybody is the possessor of that thing, and by implication responsible for its upkeep. Much of the rhetorical thrust behind lists of 'world heritage' or 'the common heritage of mankind' is to emphasise human responsibility as a species for preserving the cultural achievements of humanity, even if in practice such responsibilities for maintenance fall on national governments. One might suggest, for example, that Beethoven's Fifth belongs to humanity in the sense that it would be a loss for humanity if it were forgotten.

Enter the Internet, and the ways in which it has made humanity at large into 'curators' of images and 'publishers' of blog posts and 'citizen journalists'. Copyright has been a natural source of friction for the Internet because copyright regimes have their origins in times when to 'publish' on any appreciable scale required the use of a printing press, and 'sharing' was something done by circles of friends or the patrons of a public library, one at a time. For spectators of the 'copyright wars' this has therefore often seemed to be a tale of big business versus the little guy. In many respects this is because that is what it is: when Lessig wrote *Free Culture* it was in the wake of an unsuccessful legal battle to prevent a retroactive extension of the duration of American copyright (Lessig, 2004: 214ff). While such extensions do serve to increase the lifespan of the humblest scrivener's copyrights as well as the Walt Disney Company's, they serve the private commercial interests of the *status quo* at the expense of public interests in what James Boyle, in his legal scholarship on the public domain, has characterised as a commons (Boyle and Lessig were both among the founders of the Creative Commons organisation):

We are in the middle of a second enclosure movement. It sounds grandiloquent to call it "the enclosure of the intangible commons of the mind," but in a very real sense that is just what it is. True, the new state-created property rights may be "intellectual" rather than "real," but once again things that were formerly thought of as either common property or uncommodifiable are being covered with new, or newly extended, property rights (Boyle, 2003: 36–7).

What is at stake concerns the proper scope of property and ownership, then: the appropriation of the formerly unowned, the expropriation of the commons, the privatisation of the public. Yet it is not only about that. Not for nothing did Lessig call one of his books *Free Culture*, and subtitle it *How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity*. In it he set out to show how a rough divide between the free and the controlled has now been erased. The Internet has set the stage for this erasure and, pushed by big media, the law has now affected it [so that] the ordinary ways in which individuals create and share culture fall within the reach of the regulation of the law, which has expanded to draw within its control a vast amount of culture and creativity that it never reached before. [...] The consequence is that we are less and less a free culture, more and more a permission culture (Lessig, 2004: 8).

Once again, everything comes back to the theme of culture.

It is in the nature of culture that it is something shared between and among people. Culture is what humans do together. Even a private, silent reader is engaged in a mental dialogue with the author; and out of such practices emerge book clubs and public libraries and literary festivals and all the other trappings of literary culture. The private listener who absorbs music through earphones on the commute to work is in some small way plugged into the fan culture that surrounds his or her favourite performers. The person drinking a solitary espresso in the furthest corner of a coffee shop is still a participant in café culture.

It is therefore plain enough why culture should be of interest to someone concerned about the public domain, the intellectual commons: culture by its very nature is always and inescapably shared, even when aspects of it have been placed under proprietary control. Whereas an item of property can perfectly well be the property of some individual, a culture all of one's own can barely be conceived of: the nearest thing, perhaps, might be the final days of a culture that is about to die, when the last speaker of a near-extinct language calls things by names that will never be used again.

4. Cultural Appropriation

Note the transition in the previous paragraph from 'culture' to 'a culture'. For of course it is well known that while culture is inherently and inescapably shared, it is not necessarily shared with everybody. Indeed culture, along with and overlapping with geography and nationality, is an important aspect of a sense of personal identity: *I do things this way*, one thinks, *as my people characteristically do, in contrast with those other people living elsewhere*. Encounters with those funny foreigners and their exotic customs have long provided fodder for travelogues, and conversely the bumbling tourist is a comedic staple. National stereotypes range from the affectionate to the slanderous. Diplomats and business travellers find themselves navigating new labyrinths of unfamiliar etiquette as they learn how best to ingratiate themselves abroad.

The Internet has done much to enable international conversation, but if anything it has fostered a veritable kaleidoscope of cultures based around other kinds of interest and experience: every obscure fandom and minority fetish can have its little corner of the Internet in which to make friends and socialise and discuss the one peculiar interest that brings members together from across the globe. As the webcomic *xkcd* puts it: 'Human subcultures are nested fractally. There's no bottom' (Munroe, 2012).

That much is familiar and natural. Things become trickier when one seeks to define and delineate a given culture. Notoriously, cultures 'do differ, but they differ in a way which is much more like that of climatic regions or ecosystems than it is like the frontiers drawn with a pen between nation states' (Midgley, 1991: 84).

Indeed, it is as conspicuous that ideas and styles and stories make their way across these borders as it is that there are multiple cultures in the world to begin with. Enterprising restaurateurs make it possible to sample many of the world's cuisines with merely a trip downtown: some chefs have even adapted and invented recipes to suit local palettes, with famous examples including General Tso's chicken (named after a Qing dynasty Chinese official but probably American), 'Chinese' fortune cookies (also American) and possibly chicken tikka masala (there is some dispute over whether it originated in Glasgow or is 'authentically' Indian). There are extensive international markets in literature and music (albeit aided by the popularity of English as a *lingua franca* into which to translate): educated Anglophones are expected to have at least heard of Tolstoy (Russian) and Bashō (Japanese). Hollywood is so enthusiastic an exporter of culture that it has contributed to what has been disapprovingly given the name 'Americanisation'.

If anything, however, in some people the very blurriness of cultural borders seems to inspire an invigorated desire to police them. The popularisation of the notion of cultural appropriation, bursting forth into public consciousness through the actions of activists and journalists questioning whether any but the Chinese may wear a qípáo and whether cornrows are morally permissible haircuts for non-black Americans, has led to moments of bemusement at best for some researchers already acquainted with the term through scholarship on whether cultures can suffer harms. The anthropologist Michael F. Brown has blogged about both the conceptual complications inherent in the concept—'Where does Mayan creativity end and some other society's creativity begin?' (Brown, 2017b)—and his hopes that nonetheless 'public understanding can move beyond trivial arguments about hoop earrings, yoga, and Asian cuisine to acknowledge the real injustices suffered by indigenous peoples when their hard-won traditional knowledge is commercialized or otherwise misused by outsiders' (Brown, 2017a).

Thus one might roundly dismiss excitable controversies about inauthentic sushi, sceptical that Western culinary fumblings have the power to undermine the Chrysanthemum Throne, while giving more careful thought to whether the most marginal and 'subaltern' cultures of the world might be at risk of arguable harm: of assimilation through a blurring of cultural boundaries so complete it amounts to erasure, or of seeing practices cross a border not only between cultures but between the sacred and the profane. (For detailed

academic commentary on the ethics and aesthetics of cultural appropriation see (Young, 2010; Young & Brunk, 2012).)

This genie, however, is out of the bottle, and the effect has been greatly amplified by the Internet. It was via the Internet that a photograph of a Chinese-style dress worn by a non-Chinese person sparked that most cybercultural of phenomena, a Twitterstorm. Reportage of the trending topic by journalists promptly drew further attention to the 'hundreds of thousands of likes, tens of thousands of retweets, and thousands more comments as supporters and critics clashed over the weekend over the concept of cultural appropriation' (Bell, 2018).

Of course some light was generated as well as prodigious heat; the nature of connectivity is that it fosters both. It is thanks to the Internet that one may read Brown's blog posts. One goes to Snopes.com to check the accuracy of reports about 'appropriation' of sombreros by non-Mexicans (LaCapria, 2016). What is noteworthy in the case of flame wars concerning cultural identity, however, is that this is after all the global Internet, the great planetary communications network that crosses all national borders. To witness it fostering such vigorous controversy about a blending of cultures is to learn something about how limited the extent is to which internationally interconnected technology fosters globally cosmopolitan culture.

5. Borders and Censors

Perhaps it was particularly fitting that this particular controversy involved the culture of China. (Or an aspect of some Chinese culture. One of the points of debate concerned the history of the qípáo or cheongsam among China's various ethnicities.) For it is the People's Republic, after all, which has so blazed the trail of online balkanisation that the 'Great Firewall of China' has entered into common parlance.

As the Internet has seeped into so many aspects of human existence, the nations of the world have taken a variety of approaches to regulation, law enforcement and outright censorship: the banning of 'unregistered bloggers and online forums' in Tanzania (Ng'wanakilala, 2018); 'Dutch police [who] are knocking on social media users' doors and asking them to be careful writing posts about refugees' (Dillon & Dahl, 2016); a tax on social media 'gossip' in Uganda (BBC News, 2018); in the United Kingdom, taking down music videos from YouTube and barring their makers from using 'certain words and themes' (McChrystal, 2018); and in Vietnam, a law with provisions to ban any online posts deemed as "opposing the State of the Socialist Republic of Vietnam," or which "[offend] the nation, the national flag, the national anthem, great people, leaders, notable people and national heroes," according to the reports. The same sources state that the law's Article 8 prohibits the use of the internet to "distort history, deny revolutionary achievements or undermine national solidarity" (Committee to Protect Journalists, 2018).

It is mainland China, however, that has the dubious fame of having done so much to bring into existence what is sometimes called a 'splinternet'.

What if you could not access YouTube, Facebook, Twitter, and Wikipedia? How would you feel if Google informed you that your connection had been reset during a search? What if Gmail was only periodically available, and Google Docs, which was used to compose this article, was completely unreachable? What a mess!

These things happen almost every day in China. [...] The Chinese government can remove the "harmful information" or even punish its authors inside China. For information hosted outside China, however, the Chinese authorities can do nothing but block or filter access. Without censorship at the international gateway of the Internet, the traditional censorship systems are utterly worthless. This is why [the Great Firewall] is so critical for the whole system, and so important to the stability of the Chinese state (Anderson, 2012: 40).

The implications for online culture are grave and substantial, and yet at the same time indirect, secondary and even incidental. Chinese censors are not pursuing cultural policy as such. They are seeking to maintain political and social control by all possible means. At times the results seem darkly and surreally comedic: censors defending the august dignity of President Xi Jinping from subversive commentary have been known to block Winnie the Pooh (McDonell, 2017) and the letter *n* (Phillips, 2018).

So much, at any rate, for the borderless world of the global Internet. The geographical borders of nation-states are now mirrored online by both regulatory borders and content filters. Indeed, the circumvention of blocking technologies has itself become a facet of online culture and the political debates associated with it—after all, website blocking works in similar ways when used to suppress free speech and when used to frustrate copyright infringement, and the same tools are used to circumvent it in both cases.

This state of affairs may give the impression that nation-states are invariably keen to impose themselves and their governance upon the globally decentralised infrastructure of the Internet, differing only in degrees between the totalitarian censorship of China or Iran and the milder, more selective restrictions imposed in liberal and democratic states. While that picture is not so very far from the truth, it is an oversimplification. Nations do not invariably and consistently seek to maintain tightly restrictive borders, offline or on. Indeed, the very China that so keenly filters its citizens' online communications has been no less keen to involve itself in economic globalisation. Unlike its traditionally isolationist neighbour North Korea, the People's Republic enjoys the mantle of a global power rather than a 'hermit kingdom'. (Though even North Korea inspires sufficient fascination to have inadvertently made its own mark on the wider Internet in the form of the fansite PyongyangTrafficGirls.com.)

In this respect nation-states have found new challenges in the interconnectivity of the Internet, but also new opportunities.

6. 'Virtual Citizenship'

'Citizenship and its varying legal definition has become one of the key battlegrounds of the 21st century,' declared *The Atlantic* in February 2018, 'as nations attempt to stake out their power in a G-Zero, globalized world, one increasingly defined by transnational, borderless trade and liquid, virtual finance' (Bridle, 2018).

What this turns out to amount to is that Estonian 'e-Residency is a transnational digital identity available to anyone in the world interested in administering a location-independent business online' (Estonian Police and Border Guard Board, n.d.), who can thereby 'easily start and run a global business in a trusted EU environment' (Republic of Estonia e-Residency, n.d.). Being designed and intended for commercial use, it naturally brings to mind already existent phenomena of 'brass plate companies' with a legal but otherwise only a notional presence in their territories of incorporation. Yet the rhetoric attached to the scheme has been suggestive and evocative of a far broader and grander vision:

> This is part of Estonia's moonshot goal of creating "a new digital nation for global citizens," a world in which outdated barriers to entry are eliminated and there are freer flows of talent, ideas, and resources. [...] Estonia wants to be a role model and leader for a different way of seeing the world: a world that is more open, meritocratic and reflective of the demands—and opportunities—of the 21st century (Rinne, 2018).

The practical foundation for this soaringly visionary language is Estonia's enthusiastic embrace of digital technology. 'We have built a digital society and so can you' is the proud declaration that greets visitors to e-estonia.com. 'Named "the most advanced digital society in the world" by Wired, ingenious Estonians are pathfinders, who have built an efficient, secure and transparent ecosystem that saves time and money' (E-Estonia, n.d.). Already a keen adopter of connected technologies, from Internet voting to blockchain-based tracking of medical data, 'Estonia sees the natural next step in the evolution of the e-state as moving basic services into a fully digital mode. This means that things can be done for citizens automatically and in that sense invisibly' (Ibid).

It is within such a context that Estonia's e-Residency scheme has come to be promoted as a step forward into a future of 'virtual citizenship'. (The e-Residency scheme itself explicitly does not confer Estonian citizenship rights, physical residency or right of entry, and its digital identity card is not a physical identification or travel document (Estonian Police and Border Guard Board, n.d.). In this respect it is more modest than the 'golden visas'

which some countries make available to major investors from abroad (Bridle, 2018)). It is readily tied to ideas about social progress fostered by technology: when one spends much of one's life conversing online, shopping online and accessing services online, and when one considers the pace and recency with which this has become commonplace, one might be open to a suggestion that identity itself is being virtualized, too. It no longer needs to be tied to place or nation to function in the global marketplace.

Hannah Arendt called citizenship "the right to have rights." Like any other right, it can be bestowed and withheld by those in power, but in its newer forms it can also be bought, traded, and rewritten. Virtual citizenship is a commodity that can be acquired through the purchase of real estate or financial investments, subscribed to via an online service, or assembled by peer-to-peer digital networks (Bridle, 2018).

Of course, even someone who is so thoroughly and enthusiastically immersed in the online connectivity that modern technology has made possible might nonetheless raise an eyebrow on seeing the words 'citizenship' and 'commodity' in such a juxtaposition. Presumably no-one is expected ever to lay down his or her life in defence of a virtual mother country or a commoditised e-fatherland. Indeed, it seems that Estonian e-Residency is so unlike conventional citizenship that even the leaders of other nations' governments may possess it without raising questions of mixed loyalty:

e-Residents are often "digital nomads" who work in a variety of locations. They include not only freelancers, independent, and remote workers, but also investors, CEOs, and even prime ministers. Japanese prime minister Shinto Abe [*sic*: read Shinzō Abe] was the first; more recently [French president] Emmanuel Macron has joined the e-Resident ranks (Rinne, 2018).

Citizenship is a concept with a history of its own: the *Civis romanus sum* ('I am a Roman citizen') used to assert the rights of citizenship under the Roman Emperors, for example, is related to but crucially distinct from the ways in which the Citizens of revolutionary France developed an understanding of themselves and their loyalties as the people of a post-monarchical republic. Hence the possibility that with social and technological change come changes in what it means to comport oneself as a citizen should not be rejected out of hand.

Yet one might reasonably wonder whether a commoditised 'citizenship' retains much meaning: whether a category of 'virtual citizens of Estonia' is any more intrinsically interesting than that of 'people who shop on eBay'. There is certainly room to wonder how much fellow-feeling exists between 'virtual citizens'—and here again culture rears its head. Compatriots of countries in the ordinary and non-virtual sense, whether or not they personally know or like each other as individuals, are bound together in the intricate webs of national culture. One rather has to doubt that Shinzō Abe and Emmanuel Macron

have their fingers very firmly on the pulse of Estonian culture, even in its internationally connected aspects.

7. Identity

It is perhaps too soon to speculate with any great confidence about what virtual citizenship will ultimately portend for human identities and ties of loyalty. Already it is proving a flexible and fecund notion for scholarly analysis: a literature trawl for 'virtual citizenship' reveals papers linking the term to topics ranging from Chinese broadcast media (Mi, 2005) to Internet censorship and 'sexual citizenship' in the United Kingdom (Wilkinson, 2011). It seems frankly doubtful that every user of the term approaches it with the same expectations and employs it in exactly the same ways.

To the extent that talk of 'virtual citizenship' is seen to coalesce around a thematically consistent set of concerns, however, it is more or less explicitly contrasted with the ordinary legal status of being a citizen of a nation-state (in spite of the fact that, as noted above, e-Residency of Estonia is compatible with being even the head of government in another nation-state). In order to be a phenomenon worth talking about in the first place, virtual citizenship must connote the possibility of something novel and remarkable and excitingly or disturbingly different.

Put simply, as media allow for and indeed promote the dispersion and dilution of national identities, the hold on the collective imagination of these identities diminishes. This in turn undermines the steering capacity of national consciousness. Citizenship becomes disconnected from the nation (Downes & Janda, 1998: 29).

These national identities are, in important respects, cultural identities:

It has often been assumed that the dispersion of national identity will lead to a homogenization of culture and thus a homogenization of collective identity. [...] Yet attention to the modes of development of communication media points as much in the direction of the pluralization of identities as it does in the direction of homogenization [since] contemporary media are [...] characterized by the constant formation and overlapping of new networks of exchange. They lead to what has been called famously the "death of distance" and thus open the possibility that an unending variety of communities can be constructed without the constraints of place (Ibid).

Where the effects of 'print culture' were augmented by visual and electronic media 'such as television, film, broadcasting and the interactive Internet' (Mi, 2005: 327), Estonian e-Residency is suggestive of a further phase of development: not the Internet as a stablemate of television and the rest of 'the media', nor even the Internet as the great replacer of printed

newspapers and traditional broadcasting, but the Internet as a utility for doing business.

The project most thoroughly attempting to reinvent citizenship for the online age, however, is not Estonian e-Residency but Bitnation, part of the 'Internet of Sovereignty' (Bitnation Pangea, n.d.) and the world's first Decentralised Borderless Voluntary Nation (DBVN). Bitnation started in July 2014 and hosted the world's first blockchain marriage, birth certificate, refugee emergency ID, World Citizenship, DBVN Constitution and more. The website proof-of-concept, including the blockchain ID and Public Notary, is used by tens of thousands of Bitnation Citizens and Embassies around the world (Ibid).

Unlike the micronation of Asgardia, which launched a satellite into space with citizens' data stored on board in order to have some sort of territory to call its own (Mosher, 2017), Bitnation is every bit the child of the Internet its name implies. Its website—https://tse.bitnation.co/—resembles a Silicon Valley start-up's or a consultancy firm's more than it evokes a nation-state, with sections including 'Core Contributors', 'Our Partners', 'Media Coverage' and 'Awards'. Examining the Terms of Use reveals that the site 'is owned and operated by BITNATION AMERICAS LTD. Belize', which 'has the sole discretion to change any Term at any time' and 'reserves the right to deny access to this website to any particular person or access from any particular internet address to this website, at any time, without having to provide its reasons' (Bitnation Pangea, 2018)—a power perhaps to be envied by the President of the United States, after an American court 'ruled that Donald Trump cannot block people on Twitter, because it violates their first amendment rights to participate in a "public forum"' (Wolfson, 2018).

That Bitnation and Estonian e-Residency should exist is less remarkable than that they exist in what remains a world very much of traditional citizenship of nation-states. Perhaps the nation-state is a 'double metaphor' (Downes & Janda, 1998: 29), but it is also the concrete reality within which one lives one's life, and to be stateless or living in a 'failing state' is a condition hardly to be envied. To envisage possibilities of a 'deterritorialized global market for citizenship' (ibid) is to be reminded that the nearest thing that presently exists is a global flow of migrants and refugees.

8. Nations and Migrations

It is telling, nevertheless, that this global flow does exist at such a scale. The number of international migrants (including refugees) increased by forty-one percent between 2000 and 2015, with 244 million people living outside their nations of birth (United Nations, 2016). It was at this point that immigration and asylum became a major political flashpoint in Europe, as member states of the European Union struggled to deal with a mass influx of refugees and economic migrants from Africa, along with the fates of those who perished on the way across the Mediterranean. The visa-free Schengen Area of twenty-six European countries came under consequent strain: 'Germany reinstated border controls along its border with Austria in September 2015, after receiving an estimated forty thousand migrants over one weekend' (Park, 2015).

Freedom of movement consequently lost some of its lustre in the popular imagination; in the offline world of physical and national geography, at least, the high noon of ideals about opening and dissolving borders may already have passed. 'Nation states have started to matter again, and people care about borders [...] Today more than 65 countries now wall or fence themselves off from their neighbours — a third of all nation states' (Marshall, 2018). Nevertheless, international migration at a large scale is a phenomenon that shows scant signs of abating: two years after the crisis of 2015, the increase in migration between 2000 and 2017 was reported to be forty-nine percent, with the total having risen to an estimated 258 million (United Nations, 2017).

To read of the balkanisation of the Internet, of a 'splinternet', of content filters imposed upon the Net by nations' courts and governments even in the more liberal and democratic parts of the world, is naturally to receive the impression that borders and the policing thereof are things which nation-states avidly pursue and maintain. Yet it was with reluctance and as an emergency measure that Germany imposed controls on its border with Austria. It is true, of course, that more illiberal nations will control their geographic borders as closely as they do their online ones. However, border control is open enough, across enough of the world, for those 258 million people to have migrated.

The Germany that so reluctantly suspended its open borders in the Schengen Area is also the country in which 'prosecutors in Mannheim investigated CompuServe and Deutsche Telekom AG's T-Online service because users could access a Canadian neo-Nazi site on the World Wide Web'—with the result that a law was passed as long ago as 1997 that 'subject[ed] [Internet Service Providers] to criminal prosecution for knowingly acting as a conduit for illegal content that is technically possible to halt in transmission' (McGuire, 1999: 770). There is no straightforward relationship, it seems, between a country's attitudes towards porous geographical borders and its attitudes towards content filtering online.

Something similar emerges when policies on national culture and the movement of cultural goods are compared to policies on migration. Greece, noted above for its role in the ongoing dispute about ownership of the Parthenon Marbles, lost about one person in fifty in the aftermath of the financial crisis (Smith, 2015). Italy, the country that restricts the export of any book printed more than fifty years ago, also found itself with many of its younger generation 'forced to leave' (Johnston, 2012). Both nations are members of the Schengen Area.

This is simultaneously a time of fascination with both 'cultural patrimony' and 'virtual citizenship'—an age as keen to explore means of securing mobility for people and businesses as it is interested in 'repatriation' of cultural goods to the countries from which they came. This is a curious state of affairs, and it cannot even be ventured as part of the explanation that national governments are invariably interested in national cultures; for the ways in which a county's people live their day-to-day lives *are* aspects of its national culture, and a large enough demographic shift will have cultural implications too.

Having tied these various tangled threads together, it is here that one reaches a possible means of cutting through this Gordian knot. Perhaps the reason some nations' governments seem far more interested in retaining artefacts within their borders than in the movement of people is that they are responding to an age of globalisation and global mass migration by placing a redoubled emphasis on symbolisms of nationality. States are, after all, in many respects symbolic: they even mark out their territory and influence with distinctive flags. In the literature on territorial rights, topics recognisably involving countries' cultural heritage are sometimes discussed in terms of 'symbolic value' (e.g. Miller, 2012: 261ff).

The Internet, and the expansion of the world's cultures into *cyberculture*, add further twists to this tale. Most obviously and practically, the 'virtual citizenship' of Bitnation and Estonian e-Residency would not be possible without the Internet. Neither would a world with so many instances of international collaboration, complementing physical migration with remote working and 'digital nomads'. Yet there is more to it than the mere fact that such things have become technologically feasible.

It was the technological possibilities of the Internet that gave rise to whole 'virtual worlds'. It is consequently through involvement in the cultures of the Internet that one can come to ask how great the gulf really is between an online virtual world and a world in which nations seek to construct and sustain themselves through symbols and stories and reliquaries of their pasts.

Edward Castronova, the economist whose early work in virtual worlds research is quoted in the opening of this essay, would later survey the state of what people were doing via electronic media and conclude that 'we've seen an unbundling of the parts of virtual worlds. Sociality went to Facebook. Complex heroic stories went to single-player games. [...] Virtual currency went to Bitcoin' (Castronova, 2014). Enthusiasts of 'virtual citizenship' seem to be making a complementary suggestion: that citizenship, or even the nation-state itself, is in the process of being unbundled into a global market in services and service providers.

This leaves culture in a strange position. If traditional understandings of national citizenship are indeed beginning to give way to a global market in unbundled services, then citizenship starts to lose its efficacy as an anchor of personal identity: eventually everyone will become a 'citizen of the world', which will have turned out to mean a purchaser of services from anywhere or nowhere in particular. In the face of such globalised deracination, culture and ethnicity are what is left to fill the gap when someone asks, 'Who am I? Who are my people? Where do I belong?' The spectacle of people arguing about a dress on Twitter is consistent with this expectation.

Yet culture also remains a focus of *national* identity: it is as true for nations as for individuals that culture is what is left to fill the gap once citizenship has begun to be virtualised. Nation-states are not observably vanishing, and the travails of the European Union from the Brexit referendum onwards should have given pause to anyone who expected them to wither away. Bitnation may or may not offer a taste of the future, but in the present

it is traditional nation-states that have extended their regulatory presence online to 'balkanise' the 'splinternet'. Meanwhile virtualised e-Estonia is, after all, backed by Estonia. Nationalities and cultures remain intertwined online as well as off: Chinese presence on the Internet manifests itself both through the People's Republic's 'Great Firewall' and, in the wider world, through arguments on Twitter about traditions of Chinese dressmaking.

9. Rights and Liberties

For spectators of the 'copyright wars' it has been easy to be struck by the impression that here one encounters two faces of culture: one pulling towards proprietary control and national regulation, with deeper roots in the physical world and the time before computerisation, and another kindled into life by the early public Internet, for which in some sense all governments are foreign and all borders imaginary. In the year of 'Save the Meme!' that remains as much the case as ever. It is in this arena that one encounters such scholars as Lessig and Boyle defending the public domain, the cultural commons owned by all or none.

Meanwhile, the Internet and its role in day-to-day life have developed in an age which is fascinated by 'cultural property' and 'cultural appropriation'. This serves to reinforce a sense that culture is subject to claims of ownership: a different kind of ownership compared to intellectual property, but nevertheless a right of use or access which some possess and from which others are excluded.

In practice, intellectual property regimes can find themselves in tension with claims of cultural property. The World Intellectual Property Organisation has spent years trying to fit indigenous peoples' 'traditional knowledge' and 'traditional cultural expressions' into its wider commitments. The concepts of a cultural commons which one encounters in relation to what is sometimes styled 'cultural intellectual property' look largely unlike a public domain of things which are free for use by anybody. Rather, stories, motifs or other trappings of a culture are reckoned to be shared among those whose culture it is: among the members of a cultural community, and exclusively so except where appropriate permissions have been given to outsiders.

Here the focus is on minority cultures; whereas the national cultures of nation-states are of course majority cultures, domestically though not necessarily in global terms. For Will Kymlicka, known for his defences of multiculturalism and 'cultural rights' from within traditions of liberalism, the distinction is a significant one:

> The problem is that most liberals have assumed, implicitly or explicitly, that individuals will achieve their freedom and equality within the *majority* culture; that minority cultures would and should disappear; and hence that modern states would, over time, become "nation-states," with a common language and national identity. [...] This assumption is slowly being abandoned (Kymlicka & Marín, 1999: 135).

Kymlicka's liberal commitments require collective rights to be grounded in individual ones. Thus John Rawls's idea that there are 'primary goods' which people assuredly want whatever else they want 'appears to leave the door open to many [...] candidates—not least among them, Will Kymlicka says, being *culture*. Indeed, he thinks Rawls has not just left the door open to it but sat it down and served it tea' (Appiah, 2010: 121). Groups' rights to their cultures are explained in teleological terms, with culture as a good serving to justify culture as a right:

Will Kymlicka has argued that special steps are often justified to protect minority cultures. The property-based arguments [which are sometimes advanced in order to ground claims to land] are in many ways backward-looking; they consider how much past ownership should matter in the present day. Kymlicka's argument, on the other hand, is primarily forward-looking—what can be done to increase the odds of survival for minority cultures in the future (Hendrix, 2005: 768)?

This is not so very far from the approach to justifying intellectual property which asks what can be done to encourage a healthy supply of creative works in the future. It is a defence of proprietary rights which treats them as a means to some other social good—and so Hendrix's summary *contrasts* such an approach with 'property-based arguments'.

This should not, perhaps, come as a surprise. In her work on hacker culture, E. Gabriella Coleman expressly considers it a product of liberal traditions of thought:

Because hackers challenge one strain of liberal jurisprudence, intellectual property, by drawing on and reformulating ideals from another one, free speech, the arena of F/OSS [free/open-source software: see below] makes palpable the tensions between two of the most cherished liberal precepts— both of which have undergone a significant deepening and widening in recent decades. Thus, in its political dimension, and even if this point is left unstated by most developers and advocates, F/OSS represents a liberal critique from within liberalism. Hackers sit simultaneously at the center and margins of the liberal tradition (Coleman, 2012: 3).

'F/OSS' is a combination of two terms. Open-source software is software for which the source code in which it was programmed has been published under licence, enabling the software to be freely studied, distributed and even modified (Open Source Initiative, 2007). Free (or *libre*) software is, in effect, open-source software as an ethos:

The two terms describe almost the same category of software, but they stand for views based on fundamentally different values. Open source is a development methodology; free

software is a social movement. For the free software movement, free software is an ethical imperative, essential respect for the users' freedom. By contrast, the philosophy of open source considers issues in terms of how to make software "better"—in a practical sense only (Stallman, 2016).

The quoted paragraph in support of free software is from Richard Stallman—whom none other than Lawrence Lessig cites as a major influence in the preface to *Free Culture* (Lessig, 2004: xv-xvi).

10. Cyberculture

Hacker culture remains an important element of Internet culture; computer hackers long ago ceased to be a greatly sizeable force online in sheer demographic terms, but they represent the technical attitudes and expertise that built and maintain the Internet and grasp how it works on a technological level. In Coleman's view, 'free software hackers not only reveal a long-standing tension within liberal legal rights but also offer a targeted critique of the neoliberal drive to make property out of almost anything, including software' (Coleman, 2012: 4). Ascribing such a tendency to 'neoliberalism' may be too narrow, however. Coleman quotes a definition of neoliberalism that understands it in terms of 'strong property rights, free markets, and free trade' (ibid). This comes close enough to Lessig's critique of copyright, and his defences of 'free culture' and 'RW culture'.

Yet already this highlights how there is no simple ideal of 'strong property rights'. Intellectual property places limitations on ordinary property rights: as the owner of a copy of a novel under copyright you can, for example, resell it or even incinerate it, but replicating it for distribution is a monopoly right denied to the ordinary owner. By the time one reaches *cultural* property the picture is still more plainly a complicated one, since it emphasises ownership of culture by peoples or nations.

As the Internet has grown in importance and worked its way into so many facets of so many lives, it has further complexified the picture. When one approaches 'cyberculture' with a background in tussles over 'cultural property' it looks like a stark contrast: people liberally sending memes back and forth in a borderless global conversation very unlike 'repatriation' of objects to their countries of origin. Yet nations have asserted themselves online, and have sometimes been keener to erect regulatory borders on the Internet than to police the borders of their physical territory. People now speak of the 'balkanisation' of the 'splinternet' in contrast with the Internet of fairly recent memory.

Even so, at the same time the Internet has affected nation-states. 'Virtual citizenship' and e-Estonia are the outcome: nationality of a sort, but not as it has traditionally been understood. In place of 'virtual worlds' in clear contrast with 'real life', one can now be 'virtually' resident in a real and sovereign country. With the continuing involvement of connected technology in all manner of things, the future may turn out to be one in which all culture has blended into cyberculture.

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13. *Digital individuation and the occlusion of the protentional system*

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Abstract

An anthropo-technological perspective (Sloterdijk) understands human technicity as inaugural and constitutive: human living beings are both psychophysically and behaviourally framed through technical praxes, that is prosthetic exteriorisations of their organic functions on extra-organic supports with shaping feedbacks on who performs them. Especially, Bernard Stiegler's approach enables us to understand how human temporality is technically structured through systems of exosomatic retentions organising our mnemic processes, configuring the criteria devoted to select the experience and therefore to shape the systems of both collective and individual protentions, that is complexes of expectations, projections and shared hopes.

In my paper I would like to inquiry how within contemporary epoch we witness to a chronic and systemic political crisis of our retentional apparatuses, that is the institutions devoted to organise our projective system. Such a disease can be detected tanks to the analysis of limbic capitalism (Courtwright) investigating how our current socioeconomic system produces vicious protentional circuits within the subjects, programmatically acting on their exosomatic retentions in order to elicit addiction-based behaviours (G. Moore). This leads to the occlusion of our protentional system, increasingly adjusted on short-term goals, devoted to the immediate satisfaction of self-referential drives promoting their self-repetition. The result is a short-circuit of the limbic-motivational system (Claessens) at the bottom of human political agency, in so far as it is supposed to perform the subjects' identification with a collective, that is a system of reciprocal alert and availability to cooperate within a complex of shared concern and care.

I will aim to show how this incapacity of identifying oneself with modes of shared life and therefore projecting oneself in their production and organisation joins together three relevant contemporary political phenomena: on an individual scale, the raise of gambling addiction (Schüll) bears witness to the subjects' exigence to search in gambling for a reassuring restriction of their worldly environment of concerns and expectations; on a national scale, the appearing of identity politics based on ethno-geographic belonging reflects the populations' struggle to see themselves mirrored in macro-organisations and long-term projects; on a global scale, the phenomenon of climate porn thematises the feeling of impotence and indifference engendered before the obsessive provision of images and news about ecological disasters in distant regions. Hence, a politics for the future, that is a politics that will both be able to exist in the future and take care of the future from our present, should definitely provide an attentive reorganisation of our retentional apparatuses, rearranging the political dimension through new forms of participation, also passing through a ponderation of the stake represented by the implementation of digital technologies.

1. Anthropotechnology, or human originary technicity

Under the concept of anthropotechnology, following the insights of the contemporary German philosopher Peter Sloterdijk (Sloterdijk 2009), I understand a theoretical perspective seeking to enquire into the relation between technics and the human lifeform, understanding this relation as originary and constitutive. This approach draws from contemporary philosophies of technology (Stiegler 2018b; Sloterdijk 2001; Latour 2005) and life sciences, especially evolutionary biology (Odling-Smee, Laland & Feldman 2003), palaeoanthropology (Sterelny 2012) and psychoanalysis (Winnicott 2012), aiming to set up a transdisciplinary research project. My goal is to benefit from a scientific, up-to-date set of knowledges and frame these findings within a critical, genealogical understanding of those organisms which acknowledge themselves as humans. According to this anthropotechnological perspective, I seek to investigate the originary technicity of human existence, showing how the relation between technics and the humans is constitutive, i.e., human lifeform could neither exist nor be conceived without consideration of the complex of technical practises producing, transmitting and surrounding it in every instance of its occurrence.

Humans are therefore physically, psychically, behaviourally as well as ecologically structured through technical practises, and this is the case regarding both their ontogeny, i.e., the individual life histories, and their phylogeny, i.e., the collective evolution of the species. Yet what is technics? By technics I mean both technologies, that is crafted artefacts, tools and devices, and techniques, that is apprehended skills and knowhows. Techniques and technologies always belong together, for every instrument may be utilized only thanks to particular rules of usage, and every tool may be produced only according to specific sets of knowledge (Leroi-Gourhan 1964; Leroi-Gourhan 1965). Tools are socially coded within a collective, and the humans belonging to that collective are able to adopt them through the generations only thanks to the transmission of the procedures and the norms which govern their usage. These set of knowledges, rituals and habits, in turn, may be transmitted only thanks to their inscription within artificial devices, so that cultures are understandable as technical apparatuses which, on the one hand, are produced and endured by a system of instruments; on the other, preserve and channel the knowledges needed to produce and transmit these instruments. From this viewpoint, technics always appears as entailment (Taylor 2010), i.e., a system of entrenched techniques and technologies related to a specific historical context and only working in their constant interrelation.

Thus, technics represents the exteriorization of life practises (Stiegler 2018b), the transfer of knowledges, capabilities and skills onto extrabodily supports, which are reorganized accordingly, in order to bestow determinate aspects of life to the non-living, this exteriorisation being both objectual and procedural, i.e., concerning both the organs and the functions these organs should accomplish (Gehlen 1950). Technical devices are

prosthetic, insofar as they replace organic functions and, in so doing, transform both these functions and their former supports (Alsberg 1975). Human ontogenetic development and phylogenetic evolution, indeed, are characterized by artificial selection of favoured traits (Moore 2017d): the cultural, that is artificial environments select for those organic features which better fit in their systems of tasks, duties and affordances (Gibson 1977), produced, in turn, by the process of exteriorization. The technical, artificial environments retroact on the organisms producing them and mould their constitution toward a closer match to their demands. Humans, therefore, do not only produce their cultural institutions, but are also extensively produced and shaped by them (Gehlen 1956). However, the adaptation to the artificial environments, normally, is not an exclusively passive process, for humans not only abide by their endogenous life conditions but are also able to actively shape and transform them, thanks to their very technical, that is constructed nature (Canguilhem 1966).

The process of technical exteriorization renders a lifeway transmissible, reproducible and modifiable regardless of the individual, biological organisms performing it, detachable from them and surviving their death. Its management is therefore bestowed to the collective, which should take care of its artificial organs, i.e., its exteriorized and collectivized life practises. Following the analyses of the contemporary French philosopher Bernard Stiegler (Stiegler 2013), human collectives should be understood organologically, i.e., considering as a whole, that is in their structural interrelation, the complex of biological organs composing the living organisms, the artificial organs, i.e., the technical media these organisms both produce and are produced by, and the social organizations, that is the systems of bio-cultural interrelations and interchanges where these organs (both biological and artificial) develop and transform.

Technics is more precisely conceivable if understood as the production of tertiary retentions (Stiegler 2018b), i.e., a third form of memory, inscribed into the non-living matter, which is therefore reorganized accordingly. Technics is a third form of memory in two instances: on the one hand, it composes human individual memory together with primary retentions, that is the perception of the flow of experience, and secondary retentions, that is the recollection of past lived instances (Husserl 2013). On the other, it articulates human collective memory together with the genetic heritage, i.e., the species-specific program inscribed in the genome, and neural memory, i.e., the individual experiences accumulating during everyone's life history. In both of these instances, technical, tertiary retentions enable the process of transmission of knowledges and operations peculiar to the human lifeform: technical inscriptions exceed the individual memory (they are managed by the collective) but also undergo intraspecific differentiation (each collective elaborates its own tertiary retentions).

Biological memory, both collective (genetic) and individual (neural), is influenced by technics, insofar as tertiary retentions select what shall be removed and what shall be retained, determining the reception of experience of both the collective and its individuals. It is important to stress that tertiary retentions always posses a collective, transindividual dimension (Simondon 2005), determining what matters for a community, its complex of concerns and care, its relation to the future. Moreover, it is relevant for what I aim to show to highlight that retentions are always also protentions, for expectations, projections and previsions are configured in relation to what has been retained from the past: according to the relevance, frequency and pervasiveness of lived and inherited experiences, we develop our relation to the future, that is our horizons of expectations and possibilities of confronting with what is going to happen. According to which types of experiences are inscribed as tertiary retentions, thus, the order and nature of our expectations may substantially change.

2. Contemporary capitalism and addicted behaviours

The anthropotechnical constitution of human existence undergoes progressive transformations according to the changes occurring within the technical apparatuses and to the ways these changes are adopted and integrated within the complex of the extant life conditions (Stiegler 2018b). Within contemporary, globalized societies the systems of tertiary retentions and the organological infrastructures devoted to their storage, elaboration and transmission undergo a systemic and chronic crisis, i.e., a disruption concerning every aspect of our lives and persisting continuously (Boltanski & Chiapello 2005), this crisis manifesting as the imposition of a new mode of existence, a new system of individuation and a new relation to time (Stiegler 2016). The ongoing disruption is therefore psychological, economical, environmental as well as political, and may be understood as crisis of capitalism, if the latter is conceived not only as an economic system but as the current, all-encompassing, globalized lifeway (Jason Moore 2017). Indeed, contemporary capitalism elicits economic disruptions, which in turn result into the environmental catastrophe represented by climate warming, the reduction of biodiversity and the breakdown of ecosystems (Pirani 2018), for big companies and national states rush to seize the last available resources of the alleged "natural" environment, conceived as standing reserve and "enframed" as indefinitely available supply (Heidegger 2000). This very same dynamic provokes existential and psycho-political diseases, for the individuals undergo stress and discomfort as both workers, consumers and political agents, this condition manifesting as the experience of a lack in meaning in life, as the loss of the capability of living and of the feeling of being part of a community (Crary 2013).

In what follows I aim to focus on the individual, existential dimension of this crisis, investigating how it essentially concerns the relation between the individuals and their collectives, i.e., their communities of belonging, highlighting how this relation is always

organologically mediated by the subjectivizing effects of technologies. However, the systemic, global dimension of this phenomenon should not be overlooked as it constitutes the background of these analyses. Indeed, the life practises the individuals adopt in order to cope with the distress and despair elicited by the current dismantling of the conditions of labour and political participation, seeking to reconstruct a seemingly meaningful and happy life, at the same time turn out to be damaging and deleterious for their social environments and biological ecosystems (Moore 2017b). This condition is well exemplified by the widespread tendency toward compulsive consumption, insofar as the quest for the temporary, anaesthetising pleasure of purchasing feeds the outsourced mass production of unnecessary commodities, which aliment, in turn, the exploitation of labour and ecologies (Haraway 2015). Moreover, the current socioeconomical situation prevents the individuals to develop their plasticity (Malabou 2007), i.e., to be able to proactively engage the ongoing crisis and react by reinventing novel knowhows and lifeways. Conversely, the individuals become unable to contribute in the production of their environments, while passively adapting to imposed conditions they cannot understand nor stand. This paradoxical, unbearable situation, a true short circuit between the collective dimension of the global market and the individual, localized life histories, is the expression of a vicious circle, where not only the individuals struggle to modify and cope with the globalized living system, but this system itself also imposes a narrative of sheer adaptation and resilience to change, playing as what is happening were unavoidable and necessary (Barbara Stiegler 2019).

The process of individuation, i.e., the organological structuring of consciences together with their biological and artificial organs and within their social organizations, is therefore compromised, and technical prostheses, that is tertiary retentions, play a pivotal role within this phenomenon. Indeed, the indiscriminate and acritical implementation of novel, disruptive technologies into the market combines with the decrease of the individual possibility of contributing to the configuration of these technologies and of the establishment of their rules of usage. It is important to state that the point is not about identifying technics as the problem and refute it as such, but rather about counteracting its passive imposition in order to develop a collaborative and contributory approach to technologies aiming at the production of novel lifeways and capabilities. We should acknowledge the pharmacological character of technics (Stiegler 2010), i.e., its being always both curative and poisonous for the process of individuation, and combat the global tendency toward proletarianization (Stiegler 2013), i.e., the progressive loss of knowledges and knowhows, up to the disappearing of the very feeling of existing.

Importantly, the current configuration of capitalism is not so much devoted to the production of goods and services as to the thematic and direct exploitation of the individual drives, the limbic reservoirs of psychic energies, considered as commodifiable resources (Courtwright 2005). In this sense, the market aims to produce ephemeral, yet easily reproducible pleasures, which render the individuals properly addicted, according

to the research perspective developed by Gerald Moore (Moore 2017a). Addictive behaviours, broadly understood, represent a good theoretical lens in order to understand the ongoing crisis of individuation: as the instance of gambling addiction clearly shows (Schüll 2012), people gamble neither because of the however remote chance of a big win nor to feel the thrill of the game—they do so in order to find relief from their everyday life and surrounding environments, perceived as essentially negative and oppressive, seeking retreat in an enclosed niche, where they feel to still have control over their lives and are able to let themselves lead astray from their anxieties and concerns. The addicts thus develop repetitive, stereotyped behavioural patterns, with scarce possibilities to evolve and compose with other habits, strengthening vie their self-repetition. These lifeways tend to occupy all of their energy and time, while at the same time separating them from their social contexts and systems of relationships.

3. Digital individuation: stereotypy and fragmentation

I believe that digital technologies, as tertiary retentions, are a very telling instance of this phenomenon, that is the enlarged concept of addiction produced by contemporary capitalism (Alexander 2000). The digital encompasses every instance of our lives, from shopping to education and research, from security to insurances, from the news to social interactions. Furthermore, digital technologies are not limited to the internet as they also directly and massively contribute to the configuration of urban development, transportations, social infrastructures and industrial production, intertwining with the other technical systems, organizing and connecting them. Few, big companies own and control most of the digital business, and these platforms, largely outsourced and transnational, are extremely opaque and impervious in relation to the national protocols of regulation. Finally, the services they offer to third parties render them especially pervasive and indispensable as they develop and provide the infrastructures other companies and even national states need, being essential for the whole economy to subsist (Srnicek 2017).

From the perspective of the individual users, what is most relevant is the huge disproportion subsisting between the interfaces which are available to modification and interaction, on the one hand, and the hidden script, the system of algorithms regulating these interfaces, which is largely inaccessible and untraceable, on the other (Zuboff 2018). The almost completely passive attitude the individuals are forced to adopt toward their digital media and devices is exemplified by the phenomenon of datamining, i.e., the extraction and elaboration of data from the individuals' online (and increasingly also offline) activities in order to provide them with contents, offers and services. The algorithmic technologies of datamining bypass the dimension of the subject, which is fragmented into packs of data and subsequently reconstructed in terms of trends and statistics (Rouvroy & Berns 2013). The digital economy based on datamining seeks to render the individuals willing to spontaneously share their data in a process of extraction of their psychical interiority, a form of power which does not impose on the subjects but rather subliminally influence their behaviours, expropriating them from the private, incalculable dimension of their lives

and thus rendering them tame, willing to be controlled, predicted and administrated (Han 2014).

By enquiring into the process of datamining, we are able to gain an insight on the apparatuses (Agamben 2006) of control and exploitation at the bottom of the production of addicted subjectivities. On the one hand, contemporary, digital individuation provokes a tendency toward stereotypy: cognitive behaviours are constantly leveraged and standardized, the contents and possibilities of interacting provided by the services are formatted according to market categories which completely disregard the specificities of the individual life histories. In this sense, the personalized experience boasted by online services is ostensible as it only represents the channelling of behaviours toward targeted, yet predefined patterns of consumption. On the other, a complementary tendency toward fragmentation is also triggered—this tendency being only seemingly opposite to the one toward stereotypy but actually representing the other side of the same phenomenon. Indeed, the passive, forced mediation of every interaction provided by the platforms makes sure that the individuals experience an increasing difficulty to compose common lifeways and participate in collective processes of individuation, their reservoirs of shared experiences being spoiled, destroyed and subsequently replaced with standardized, induced desires. As the phenomenon of digital echo chambers clearly exemplifies, the grouping of similar mindsets and behaviours does not produce social synthesis but rather only contributes to isolation and detachment from reality, substituting its complexities and nuances with brutal, easy-to-sell simplifications (Moore 2017c).

The combination of stereotypy and fragmentation provokes in the individual what I term the occlusion of the protentional system. With this expression I aim to conceptualize an important aspect of the ongoing disruption of the process of organological, anthropotechnical transindividuation: the imposition of standardized, consumption-oriented contents and options to disaffected, demotivated individuals (Stiegler 2006) provokes the narrowing of their horizons of expectations, the restriction of their capability of projecting themselves into a shared future. This phenomenon depends on the modalities according to which tertiary and especially digital retentions select and retain the individual experiences and in so doing structure the temporal constitution of subjectivity. The occlusion of the protentional system influences, on the one hand, the dimensions of the collective one is able to feel to be part of, for the community of belonging is perceived as being increasingly restricted, limited to a few, stereotyped possibilities of interaction. On the other, the extension of the future one is able to imagine, for the capability of projecting a future life is restricted to the quasi-immediate term and the satisfaction of the impelling needs only. We can witness a structural relation, in the form of a positive proportion, between the dimension of the collective one is able to feel to be part of and the width of the temporal horizon one is able to imagine and project herself into. This proportion, which would definitely benefit from further, case-specific investigations, may help us understand why the fragmented groups of individuals also experience a shorter-term future, as is

exemplified even by the gathered communities of rich, privileged people who lost every trust in the possibility of a commitment for their collectives and decided to retreat in enclosed interiors, hoping to survive to the looming ecopolitical catastrophe. Hence, we witness the decay of the capability of empathizing with largescale social configurations, imagining a long-term future life and being motivated to act for shared and cooperative goals.

From this perspective, I stress the need for developing a politics for the future, i.e., a politics that shall both be valid in the future and take care of the future starting from our present. In order to elaborate it, we should act organologically on the technologies, the living organisms constituted by these technologies and the social organizations within which these organisms operate and develop. We should work on the reorganization of our tertiary retentions and especially of digital technologies, their modes of diffusion, employ and adoption, toward a more participative paradigm—in this sense, a politics of the future being necessarily a cyberpolitics. This politics should work toward the reconstruction of complexes of shared concerns and systems of care (Stiegler 2018a), in the sense of the possibility to actively feel part of a collective which projects itself into a common future. Novel, digital technologies should therefore encourage the reactivation of the individuals' potential for differentiation, while fostering their interconnection and capability of identifying with common projects and goals at the same time.

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14. *Cyborg as Political Subjectivity – Some Contributions to Cyborgology*

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Abstract

In recent decades many disciplines and research fields have drawn their attention to cyborgs, those peculiar animated beings that spark our curiosity in various ways. Inspired by the pioneering studies by Donna Haraway, the cyborg has been understood as the avant-garde of automation; the epistemological model or topos for Literary or Cultural Studies; as the paradigm of transpecies interactions or posthuman subjectivity; and as an icon of new hope in political movements. My contribution aims to shed light on the originality of Rosi Braidotti's politicisation of cyborgs as such.

The first section is focused on first attempts to think technical objects as simple instruments, or merely to consider them in their ontological implications because of the redefining of technology throughout the 20th century (for example, in Foucault and Heidegger). Braidotti, however, deserves credit as the first to consider technological alterity as intrinsically embodied in post-modern subjectivity.

In the central section I clarify the multiple strategies of 'alliance' and hybridisation with cyborgs that Braidotti provides. Her most relevant intuitions consist of the convergence of an acute monitoring of contemporary transformations of society intertwined with the analyses of metaphorisation processes towards non- humans. Significantly, she succeeds in shaping her own position while at the same time she both gently criticises Haraway and confronts Deleuze and Guattari's reflections on the 'machinique'. Thus, the author helps us to rethink philosophically the cyborg and to reactivate her/him on the political field – neither a neutral nor a neutraliseble form of life.

In the last section I emphasize the importance of Braidotti's perspective in order to avoid a

dualistic polarisation of the debate on posthuman politics (Hughes 2004, Fukuyama 2002), i.e. bioconservatives versus transprogressists. Beyond the defence of a defiled body on one side and the techno-utopism of a biodegraded life on the other, Braidotti offers us a sui generis alternative. I conclude with reflections on particular problematic consequences that would arrive with an acritical embrace of neo-spinozist politics.

0. Introduction

Recent emerging phenomena seldom captured by Communications Studies and Political Science have established a cartography of the present that reveals more than a mere anomaly: the granting of citizenship to a robot from Hans Robotics in Saudi Arabia;[1] the bombing of Colonel Gaddai's convoy by an American Predator drone controlled ***via satellite*** from a remote base (Braidotti 2013);[2] figures such as Julian Assange, who we situate

1https://www.independent.co.uk/news/world/middle-east/saudi-arabia-robot-citizenship-more-rights-than-women-people-angry-a8024851.html.

2 "On 10 October 2011, Muammar Gaddafi, deposed leader of Libya, was captured in his hometown of Sirte and then beaten and killed by members of the National Transitional Council of Libya (NTC). Before he was shot by rebel forces, however, Colonel Gaddafi's

between pioneering journalism and techno-guerrilla activities; the oscillating consensus on forms of animal representation (confirmed by the most recent European elections); the theoretical corpus of and violent murders committed by Theodore Kaczynski; Whatsapp as *casus belli* for recent insurrection in Lebanon, or the increasing militarization of social media – the counceling of Steve Bannon.

These are but a few cases, both exemplary and problematic, that are often used as a pretext for polemics or for infinite discussion. Insofar as they constitute contradictory and multiform configurations of political involvement, it initially seems difficult to associate them with a common framework. Nevertheless, they can be interpreted, even if in a fragmented way, as symptoms of the priority that is increasingly being given to non-human alterities in the political sphere. According to Rosi Braidotti we do live in a posthuman condition.[3]

An apparently paradoxical aspect immediately emerges. Politics (in accordance with Arendt's intuition), supposedly a space reserved for relationships *among* humans (for the plurality of human voices, who seek a common world in order to make space for new life), seems to transform itself into competition regarding the forms and modalities of human interaction with their alterities. It is as if the *polis* – from which the word 'politics' stems – were being infiltrated by an exteriority long thought separate, restricted to an outside that is now re-emerging in various forms so as to corrode limits and transform borders.

Plants and insects, animals and robots, but also fungi, machines, bacteria, cyborgs proliferate into the realm of political action. An old obsession or a new wonder? Just worthless perplexities or the return of the repressed?

A new set of problems appears. Do we have the conceptual tools to conceive of forms of co-existence (in which we do not occupy the centre, are open to other kinds of relationships and languages and develop more complex practices)? What are the tensions that this new reconfiguration creates? Which partitions from the past can or must we deliberately renounce?

The *Grundfrage* of the oncoming politics can be articulated in this form: how should we conceive of politics if we take the posthuman as our starting point?[4]

convoy was bombed by French jets and an American Predator Drone, which was flown out of the American Air Force base in Sicily and controlled via satellite from a base outside Las Vegas." (Braidotti, 2013: 8-9).

3 "The posthuman condition implies that 'we' – the human and non-human inhabitants of this particular planet – are currently positioned between the Fourth Industrial Revolution and the Sixth Extinction. Yes, we are in this together: between the algorithmic devil and the acidified deep blue sea. [...] More specifically, this conjuncture positions us between two parallel and to a certain extent specular forms of acceleration: the systemic accelerations of advanced capitalism and the great acceleration of climate change. Striking a balance between these conflicting forces, so as to keep the broader picture in mind, is the current posthuman challenge" (Braidotti, 2019: 2).

4 A clarification is needed here. My personal attempt to think the oncoming politics is not based on a merely calculation of the technological impact. I do not address the political consequences of a sector that has become socially influential because of technological enhancements (as is the case, for example, with Bioethics and Informational Science when they intersect with politics). The following issues, even though relevant in terms of future politics, are not directly taken into account: what would happen politically if biotechnology could ensure cognitive enhancement? And what if technological information allowed us to transform democratic practices? What if cyborgs were as autonomous as human beings? The perspective adopted here moves instead in the direction of a posthuman political ontology; namely, it starts from a reconsideration of the political horizon, including suggestions that have emerged from the multifaceted heterogeneity of Posthuman Studies.

1. The Cyborg

In my personal disorientation or re-orientation in the political sphere, I look for new ways to interpret co-existence, with new categories and unexpected encounters. This takes into account, perhaps, the case of a matsutake mushroom (Tsing, 2015), some *Chamaerops humilis* (Mancuso, 2018), a multitude of ants in a Superorganism (Hölldobler and Wilson, 2008) or Cthulhu himself (2016), but also cyborgs.

Political philosophy has always inspired astonishing, non-human metaphors along its history: Machiavelli's Centaurus, the Ship of State in Plato's *Republic*, Agrippa's parable of the limbs and the belly, Mandevilles' bees and of course Hobbes' Leviathan – described by Carl Schmitt (1938) as a monster, person, god and artificial body together in one being. In this respect, the cyborg can be considered, in recent decades, as one of the leading figurations in posthuman politics.

According to the expert in cultural studies, who is also an expert in science fiction and cyberpunk literature – Antonio Caronia – the term "cyborg" is open to two possible definitions. A narrow definition describes it as "a «natural» body to which mechanical, electrical or chemical components are added" (Caronia, 2015: 25). A broader definition can be determined as "a being whose «original» biology is modified by any process that is finalized and controlled externally" (Caronia, 2015: 25). In both cases, the organic limit of the body has become flexible and modifiable. There are no more "spontaneous functions" or "natural" barriers.

The paradoxical aspect of such an "ironic political myth" (Haraway, 1985: 65) is that it simultaneously represents the paradigm of the non-original (some-body that is not linked to the myth of an origin) and a paradigm that has been re-invented, hyper-interpreted and semantically reshaped – that is, the everlasting possibility of origin-ality. As Origin-less being, so to say, although re-originated, it has contributed to a sinuous story with at least three turning points.

1.1. The cyborg as cultural object

Following an encyclopedic impulse to classify terms, the cyborg should be included in the *regnum* of non-human animated beings.[5] Nonetheless, its difference from other beings in the same taxonomic group remains problematic. The cyborg is not simply a monster – a natural and uncanny force – it is neither a golem,[6] nor a robot. Politically, this is immediately problematic because it literally translates, but also materially translates, into the dream of a techno-servant/worker for men.[7] In this sense, it represents a cultural construct that is also hard to locate in a chronological sense. When considering the possible origin of the cyborg as a cultural figure, one could get lost in the scope of multiple hypotheses. One

5 On this aspect see Caronia (2015: 33-96).
6 Even if I differ from the definition of "cyborg" formulated by Barbara Henry, I agree on the tangential point of artificiality where the cyborg and the golem show a unique "affinità strutturale." (Henry, 2013: 254).
7 On the political implications of slavery see Agamben (2016: 3-108). On the relationship between slavery and technological enhancements see Bodei (2019).

hypothesis is understanding the dawn of modernity, when Vesalio and Descartes started comparing the extended matter of the body with the machine, as a time that freed the body from a semiotic relationship with the environment and became constructivist. Alternatively, another hypothesis is to choose the beginning of the catastrophic perception of human creatures; this view came on the scene after the eighteenth-century enthusiasm for machines, at the beginning of the nineteenth century with Mary Shelley's *Frankenstein* and, one century later, with Capek's *R.U.R.*, which exemplifies this anxiety. Furthermore, many sci-fi scholars consider the turning point of the cyborg era to be the possibility of forms of life that survive in an Einsteinian, not Newtonian, space. In this case, the 1920's and 1930's should be considered as the criterion for the age of the cyborg, and the *Amazing Stories* magazine as its birthplace. And speaking of birth, its birthday in 1944 should not be ignored – that is, when Catherine Lucille Moore in *No Woman Born* forced readers to reflect on an alien psyche that does not come from outer space, but from a non-original and closer self. Or has cyberpunk culture re-invented the cyborg? For this reason, besides multiple, different, and possible origins, a common background seems to emerge: the cyborg is not *Imago Dei*, nor *Imago Hominis*, but a complex non-identified-Subject that exposes us to the *limitations of the human body* and raises the ontological issue: what is the human?

1.2. The cyborg as neologism

The first philological occurrence of the term is worth more attention when considering the history of cyborgology. In 1960, the paper *Drugs, Space and Cybernetics* – co-authored by Manfred E. Clynes, an eclectic scientist, and Nathan Kline, a professor of clinical psychiatry at the Columbia University – coined the word "cyborg". After this paper, they wrote a follow-up article called: *Cyborgs and space* (Clynes & Kline, 1960: 26-27; 74-76). Both of the authors can be considered as members of a broader field of research – cybernetics. The neologism "cyborg" (cybernetic organism) has been defined as a "self-regulating man-machine system" that "incorporates exogenous components extending the self-regulatory control function of the organism in order to adapt it to new environments".

The research aimed "to permit man's existence in environments which differ radically from those provided by nature as we know it" (Clynes & Kline, 1960) – in short, man's existence in space. I call attention here to how the transformative element of the body goes together with the extra-terrestrial nature of the new figure. Alienation, once directly condemned for the dehumanizing effects on forms of life in Marx's *Manuscripts of 1844* and in the

Frankfurter Schule, has thus become an existential project.

Two main aspects emerge from this perspective: firstly, the cyborg is an adapting being, an evolution of the human; it is therefore not a simple presence of *the other before the human* (a counterpart of non-humanity, *another* presence to deal with), but the presence of *the*

other in the human. The cyborg was constitutively born with a desire for flight from the planet, at the cost of re-inscribing such a *Will to Rootlessness* in the flesh itself. *Alter*-ing the body and embodying the alterities. Secondly, what is often ignored and hidden from cybermorphisms in popular culture, is that the cyborg is first and foremost a biochemical entity; it is exposed to "biochemical, physiological and electronic modifications" (Clynes & Kline, 1960) rather than prosthetic transformation or mechanic implementation (Plant, 1999; Caronia, 2015: 122-125). It is the attempt to reinvent human physiology in order to promote, by means of the machine, free movement. A new word is born: unexpectedly *toxic* and *trans-uranic*.

1.3. The cyborg as political myth

It is no secret that Haraway's *Cyborg Manifesto*, published in 1985, had an "immediate joking relation with Marx's Communist Manifesto" (Gane, 2006: 135). Its style and audacious arguments cause it to stand apart from the later posthuman manifestos (Transhumanist, Posthumanist, Metahumanist) and justify its fame. In Cary Wolfe's words "it was the unprecedented writerly whirlwind of the text that made it unforgettable—its swervings and foldings, the mix of tones, voices, and conjurings, winking at the reader here only to do some serious cage rattling on the very next page" (Haraway, 2016, VIII).

Despite the idea of a symbol of anomality, following the dream of exploration of unknown planets, the cyborg now turns into a political "figuration" (Balzano, 2015: 137-148). Against a "century of misunderstandings" (Nacci, 2000) regarding the role of technology for living beings, Haraway recuperates the cyborg and brings it finally home to Earth. Such a repositioning inaugurates the possibility for a new politics, taking into account actual conflicts and contradictions. Thus it is only with Haraway that *the cyborg becomes the paradigm of political subjectivity*, ex-orbitant *per se* and deeply engaged in the struggle for the planet. "Post-gender," "resolutely committed to partiality, irony, intimacy, and perversity" (Haraway, 1985), the cyborg announces the fourth wound to human narcissism, after those inflicted by Copernicus, Darwin, and Freud (Gane, 2006: 141). Factor of virality not virility, mutation instead of opposition, regeneration beyond the production/reproduction cycle, the cyborg becomes the founding myth of a politics without foundations. The restrictive boundaries of the modern *zoon politikon,* as well as its "seductions to organic wholeness" fall apart. Nicholas Gane calls "the three boundaries breakdown" such a collapse of the traditional barriers – that is, between *human/animal*, o*rganic/mechanic* and *physical/non-physical.* Other dualisms are also included in this blurring of clear-cut polarities: nature-culture, mind-body, theory-practice. The collateral consequences from this have been explosive, and after thirty years at least two trajectories emanate clearly from this text. On the one hand, living beings are finally free from the rigid partitions of taxonomy, so as to problematize situated kin, interspecies friendship and transpecies symbioses and re-affirm a common biosphere – that should probably be renamed "zoosphere" – over a biographical one. The *posthuman* agenda for the following years was already there, despite a certain intolerance to the term in Haraway's writing. On the other hand, a new kind of techno-bio-

power is described – the informatics of domination – where communication technologies and biotechnologies are the pioneering sectors of new forms of control, and therefore the arena for new forms of conflict.[8] The point of junction between informative systems, new media, bio-technologies, life- and data-mining as well as neoliberal accelerations, cannot be eluded any longer.

But who are these cyborgs? And where are they?

More than replicants and humanoids, cyborgs are oncomice, patented seeds and transgenic plants, but also the women of color in the integrated circuit of neoliberal society. To sum up, all of us ("not-one-and-the-same" in Braidotti's words) who are exposed to constant transformations and, therefore, unable to reiterate the illusion of a fixed and permanent identity. "Cyborgs for earthly survival!"

2. Braidotti

Rosi Braidotti has the undisputed merit of having insisted on the cyborg during the very same years Haraway started reconsidering its central role ("Cyborg is one of figures but not the dominant one;" "It's not the only way we do life" [Gane, 2006:145, 147]). In an interview in the 1990's, Haraway wondered whether the cyborg was the adequate figuration for all "non-original people".[9] On the contrary, Braidotti defines it as a counter-paradigm, in her words, "a connection-making entity, a figure of inter-relationality, receptivity and global communication that deliberately blurs categorical distinctions" (Braidotti, 2002: 240). Nevertheless, some of the old warnings and some new issues arise: How do cyborgs avoid a reduction to a trivial projection, how does one avoid turning the cyborg into one of the "technofascist celebrations of invulnerability" (Penley, Ross & Haraway, 1990: 13)? How does o ne orient it towards a posthuman subjectivity, a topic Braidotti has intensively written about?

Braidotti prefers working on cyborgs through the lens of *desire*. She realizes that they are part of the long, complicated relationship of human-machine from across the centuries. Thus she emphasizes the affective aspects of the relationship (wonder, fear, disgust, anxiety, attraction) in order to fulfil not only the becoming-machine of the body, but also the other vectorial direction: the becoming-body of the machine. Sexuality, blood, wetness of desire, sweat and affections are now put into question. In short, there is no place for technology without materialism; and this is precisely what Braidotti articulates through a variety of strategies.

8 I do not mention here the tensions cyberfeminism provoked among radical, socialist and liberal feminists. One of Haraway's insights consists of interpreting the artificiality of the cyborg – the fact it is "not born of woman" – as an element of deconstruction of any identity politics (included also identity politics in feminism movements). Alienated from an initial shared condition – the *same* social condition, the *same* discursive freedoms and the *same* sexuality – the cyborg opens itself up to a politics of alliances and to plural alterities (the Other of the Other).

9 "I appropriated cyborgs to do feminist work in Reagan's Star Wars times of the mid-1980s. By the end of the millennium, cyborgs could no longer do the work of a proper herding dog to gather up the threads needed for critical inquiry. So I go happily to the dogs to explore the birth of the kennel to help craft tools for science studies and feminist theory in the present time, when secondary Bushes threaten to replace the old growth of more livable naturecultures in the carbon budget politics of all water-based life on earth. Having worn the scarlet letters, "Cyborgs for earthly survival!" long enough, I now brand myself with a slogan only Schutzhund women from dog sports could have come up with, when even a first nip can result in a death sentence: 'Run fast; bite hard!'" (Penley, Ross, & Haraway, 1990: 17).

2.1. Desire for machines

David Noble (1997), in *The Religion of Technology,* and Nancy Katherine Hayles (1999), in *How we Became Posthuman*, caution against looking at the machine as the peak of transcendence from the physical, the sexualized, and the embodied. Deeply set aspirations for techno-enhancements ignore the blind spot where compulsive desires for non-human mechanisms originate. Accordingly, a new form of idolatry comes along, where technology represents a mystical force that overcomes contradictions and transcends the materiality of life (Gabrys, 2011). The transhumanist hypothesis in particular (that I distinguish from other Posthumanisms) seems to be even less aware of the problem. An absolute abandonment, as well as the technological hybridization perceived as an act of faith towards the machine – even though rationalized through the rhetoric of progress and innovation, does not prevent the emergence of an Oedipal, molar machine at the end of all the processes of transformation[10]. For similar reasons, in *L'hypothèse cybernétique* (2001),[11] the intellectual collective Tiqqun attacked the widespread ideology of techno-normed control. Contrarywise, Braidotti draws attention to the importance of monitoring relations of power. A constant sharing of cartographies and monitoring of the current socio-historical *milieu* are mandatory forms of activism in order to neutralize and *detour* the pervasive variety of extractivism in cognitive capitalism (more specifically the tendency to extract a plus-value of information from as many forms of life as possible).[12] This remark is essential to divert those de-humanizing forces that would otherwise infiltrate the joyful hybridization with technology. To an underpaid and precarious worker who works in a call-center, in tele-pornography, or on the dark side of the gig economy, the idea of liberation through technology sounds ridiculous, and as a worst case scenario it is the price we have to pay for the access to a surplus of technology (a reformulation of the idea of "paradise").

2.2. Desire on machines

The desiring perspective Braidotti assumes also reveals the deformations implied in desire, when desires are projected *on alterity*. Machine and cyborg have been eroticized and oedipized, presented with traits of ethnic discrimination, gender dichotomies and racialization.

Numerous variations can be found in pop-culture: the metallization or robotization of the male body; the male body transformed in a macho-weapon of destruction (for example, Terminator or Robocop); or the machine understood as an object of erotic fantasies for the male, an analogous-other of the woman (in this sense, women and machines play the same role in the logic of nineteenth-century market economy – both serve as protheses for

10 In this sense, it would be of great interest to address this issue in the Cyborg Foundation (https://www.cyborgfoundation.com/). On one hand, this platform claims for promotion of becoming-cyborg and for the defense of cyborg rights. However, on the other hand, it seems to limit the radicality of cyborgs' political stance: while it reinforces uncritically glam enthusiasm for techno-expansionism, it persists in the attempt of including cyborgs in the problematic category of "personhood".

11 https://translationcollective.files.wordpress.com/2012/06/cybernetique.pdf

12 "Hyper-reality does not wipe out class relations: it just intensifies them" (Braidotti, 2002: 245). See Cooper (2008) and Rose (1999).

the man at work – and they are virtual assistants in competition for male attention.[13] In the end we might add practices of hybridization of the body, Michael Jackson as a case in point, or anal bleaching , which evoke, beyond a vague chromofobia, haunting specters of racial purity.

"Thus, meta(l)morphoses are not sexually undifferentiated, but rather heavily marked by gender, ethnicity and sexual difference."

(Braidotti, 2002: 235)

Secondary to this argument is that, during modernism, the alterity known as the "machine" had been generally feminized, and in postmodern times the "machine" prevails in neutralization and sexual indeterminacy (the risk of hegemony of the term "trans"). However, it is still possible to oppose a constant de-familiarization with icons, messages, and fantasies of transformation. Against "the repetition of very old themes and clichés, under the appearance of 'new' technological advances" (Braidotti, 2002: 250), a non-profit oriented, political imagination can be redeemed to alter patterns of thought and mental habits. The first task is to pay attention to the metaphorization processes so as to free cyborgs and machines from all the incrustations of a white, male, and colonialist desire.

2.3. The desiring-machine

Braidotti's theoretical debts to Gilles Deleuze and Felix Guattari are no mystery. Several times, explicitly or implicitly, her philosophy works in synch with their contributions. In this context, *Anti-Oedipus* has a special place in her thought due to its insight to adopt the productive-machine as a paradigm for promoting emancipation on both a social and a

psychological scale. In a time of cultural changes and re-readings of Marx's and Freud's theories, Deleuze and Guattari prophetically outlined what has now become evident: the subject is no more a self-conscious identity before the machine – and this machine is not reducible to alterity for instrumental use. The subject is instead permeated with and surrounded by an "ethology of forces," without any plane of transcendence; it is embedded in a political ontology that transforms it into a machine among machines, where everything is cutting, forming, connecting, and multiplying flows.

Yet such disarticulation of a unitary self also implies liberation from holistic dreams of harmony to be found neither in a mythical origin (fascism) nor in the upcoming future (utopia). Thus political subjectivity has been irreparably contaminated by machines and it can finally re-configure itself towards forms of reciprocal inter-dependence, based on intensification and transformative powers of relationality. The subject becomes hybrid (constitutively oriented towards the other), affective (in the flesh and in the psyche in

13 On this specific aspect, both exemplary and sadly represented by many car advertisements, see Braidotti (2002: 259). Maria in *Metropolis* by Fritz Lang or Ava in *Ex-Machina* by Alex Garland reinforce this stereotypical overlapping of machine and women as erotic device.

an intensively relational stance), and desiring (embodied and within the limits of a zoontological sustainability) – that is, Braidotti's version of a posthuman subjectivity.

In conclusion, Braidotti's reflection allows us to appreciate both the centrality of technological accelerations in recent decades *and* the role of the cyborg as a metaphor of plurality. When considered through the lens of desire, this figuration can be re-situated politically and preserved from sclerotic re-appropriations and socio-historical naïveté. Due to defamiliarization with, and the current analyses of, the structures of power, the cyborg has completely lost its *sidereal attitude.* In other words, perspectives on the cyborg no longer have disinterest in Earthy alterities and other-others capable of transformation and belonging (thus one of the reasons why Haraway (2016: 103) has preferred the "queer family of companion species").

Oppressed and wrecked bodies are still around; suffering deeply affects the flesh and calls for justice, even in a technological brand-new world. And yet the cyborg remains a positive or, even more appropriately termed, a pro-positive figuration. It encourages the transition and translation towards a Post-Identitarian, Post- Exclusivist form of subjectivity. It also reveals the complex task of processing inputs – in addition to anxiety and grief – through a transformation to find in the singularity in each of the in-becoming forces, energies, and stories worth living for, and worth living with.

In the end, what emerges here are some of the most fascinating issues in Braidotti's research: Which desires lead us towards machines? What do we desire when we desire with and through machines? How do we desire beyond technomania, techno-pessimism, high-tech consumerism and hi-tech communism? What are the trajectories that lead us to a becoming-cyber-orgiastic (hypersensitive and connected) subject instead of a merely cyber-organic being (a new form of aseptic, codified behavior)? And maybe the most radical question for a posthuman subjectivity: what does a machine-not-simply-a-machine desire?

3. Conclusion

A brief digression may help to shed light on the importance of the metamorphoses in the present reading of cyborgs and recall topics mentioned earlier.

In 2004, James Hughes published *Citizen Cyborg*, which was the literal inversion of a book published by Chris H. Gray in 2001. After one decade, it still represents one of the most audacious attempts to think about politics with a central focus on the transhumanist hypothesis.

In his book, Hughes interprets politics through a Cartesian coordinate system: modern politics has been reduced, on the one hand, to conservatives and progressives in the economic field; and on the other hand, it has been reduced to conservatives and progressives in the cultural field. Although the entire discourse is not exempt from the risk of trivializing an understanding of politics to a simple set of oppositions, Hughes is able to provide an accessible introduction to central political partitions and foresee the future necessity of

adding two further coordinates to the analysis. The "posthuman age" will comprehend a third dimension of the coordinate system: techno-progressives *versus* bio-conservatives. These groups comprise those who accept reasonable technological progress and its consequences (and the author supports the democratic part of them), and those who, due to an inner belief or allegedly justified mistrust, oppose this progress in many ways.[14]

According to Hughes, in the future, agenda politics will claim and fight for the enhancement of intelligence, the extension of biological life limits, control over the body, and for the satisfaction of the need for happiness.

Besides possible difficulties regarding the methodology and conclusions, this analysis (and its approach to future politics) retains a familiar articulation of political action in terms of exclusive forms of polarization. For example, there is an eco-conservative or techno-catastrophist party and a technophiliac or nature-extractivist party. Both of these terms are but unacceptable simplifications, and these corroborate a posture that underestimates how concepts like "progress," "enhancement," "health," "nature," "potentiality," and "faith" are intertwined with a modern (and highly problematic) way of thinking. A violent use of polarization is eroding the liberal forms of representation in many Western societies, disempowering democracies without offering hope for more inclusive forms of coexistence. I do not encourage praise for a zone of indistinction[15] nor for a state of suspension that allows for processes to figure out solutions on their own (and threaten any (op)positionality with the return of anthropomorphism/centrism).

Here the cyborg can work as an antidote. Without polarity or a center; – neither polarization, nor neutralization – the cyborg, as political subjectivity, can situate itself in this in-between zone. From this standpoint, it fights for being *radical* without being simply oppositional, *immanent* to the social ground, *affective and relational* especially towards the most oppressed alterities, and it can be *ecological* beyond a greedily green attitude. In the

current posthuman condition, we should not linger on calculating possibilities and limits of human interaction with technology, but rethink the whole set of categories used to assume the present political horizon. More than complexifying dualisms, work should be done to disarticulate them. In this sense, the politization of the cyborg helps to renovate a conceptual framework and sketch out the "coming community", blurring dualisms and opening it up to as much bio-diversity as possible. From this perspective, the cyborg inaugurates a new season for political ontology and reorients our way of thinking political subjectivity.

14 For a schematic representation of these polarities see http://changesurfer.com/Acad/DemocraticTranshumanism.htm
15 Several postmodern authors – for example, Baudrillard – have brilliantly interepreted this sensibility.

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CYBERPOLITICS

Political philosophy of the future

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