CHANGING MEDIA
IN A CHANGING WORLD

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Webinar | 10-12 May 2021 | Casina Pio IV

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Changing Media in a Changing World

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The Proceedings of the Workshop on

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In a world like ours, where boundaries between countries are continually blurred by the developments in digital technology, our efforts should emerge as a global movement associated with the deepest commitment of the human family and international institutions to protecting the dignity of minors and every human person. This demanding task sets before us new and challenging questions. How can we defend the dignity of persons, including minors, in this digital age, when the life and identity of an individual is inextricably linked to his or her online data, which new forms of power are constantly seeking to possess? How can we formulate shared principles and demands in the globalized digital world? These are challenging questions that call us to cooperate with all those working with patience and intelligence for this goal at the level of international relations and regulations.

Man's creativity and intelligence are astonishing, but they must be positively directed to the integral good of the person from birth and throughout life. Every educator and every parent is well aware of this, and needs to be helped and supported in this task by the shared commitment born of a new alliance between all institutions and centres of education.

A contribution to this can be made not only by sound ethical reasoning, but also by a religious vision and inspiration, which has universal scope because it places respect for human dignity within the framework of the grandeur and sanctity of God, the Creator and Saviour.

Pope Francis, Address to Participants in the Congress on "Child dignity in the Digital World", 14 November 2019

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ON FAKE NEWS AND THE CRISIS OF TRUTH

Introductory Remarks to the Webinar Changing Media in a Changing World

STEFANO ZAMAGNI

▶ *PASS President*

1. In the last decade, the debate on the causes and consequences of online misinformation has acquired increasing relevance in the public sphere and in the agenda of national and international institutions. The issue of fake news, however, should be placed in the context of a generalized crisis of trust in those actors traditionally assigned with the role of producing reliable information: democratic institutions, traditional media and the scientific community. The spread of the term "post-truth", elected by Oxford Dictionaries as Word of the Year 2016, aims to capture precisely this weakening of confidence in "experts", including scientists working in different field of research.

A recent study by the MIT Media Lab (Boston) has found that false news has a higher probability of being disseminated via the web that true news, whatever the topic considered. Specifically, false news dealing with politics spreads at a speed three times higher than any other news, reaching twice the number of people (S. Vosoughi et al., "The spread of true and false news online", *Science*, 2018, vol. 359, pp. 1146-1151). On the other hand, the 2018 edition of the *Global Risks Report* indicates that the digital platforms of the main social media, such as Facebook, have directed almost 40% of traffic towards websites of false news in the last years (World Economic Forum, Geneva, 2018, p. 48).

The same Report indicates that the major high-tech corporations have started to fight against what are known as digital wildfires, i.e. news that misrepresents, misstates or conceals relevant information. In turn, the European Commission has defined misinformation as "all forms of false, inaccurate or misleading information designed, presented and promoted to intentionally cause public harm or for profit" ("Report of the Independent High-Level Group on Fake News and Online Disinformation", *Publication Office of the European Union,* Luxembourg, 2018). The ability to customize our informational environment, delivered by social media, makes it less likely that citizens will come across information that would change their minds.

There is now a near consensus – at least among those who are not completely steeped in social media propaganda – that the current public sphere does not serve us well. "Social media is broken", A. Newitz wrote in a 2019 commentary for the *New York Times*. Social media was born not to vehiculate news and information, but to generate sentiment and emotion. "It has poisoned the way we communicate with each other and undermined the democratic process. Many of us just want to get away from it, but we can't imagine a world without it".

Nowadays, the problem is not a single demagogue, but a public sphere beset by swarms of "influencers", propagandists, and bots, all semi-coordinated by the dynamics of the medium itself. Once again, ideas of dubious quality and provenance are shaping people's thoughts without having been subjected to adequate evaluation and analysis. Needless to say, there is a great deal of money and power to be gained by shaping public opinion online. If you want to get your views out there, it is easier to piggyback on the outrage machine than to develop a comprehensive rational argument.

2. A question naturally arises: why is fake news so widespread today? I do not hesitate to suggest that one of the main causes is the weakening of the passion for truth. We are currently living in a post-truth era in which truth, objective facts and science itself are increasingly under assault. Today, we are witnessing a resurgence of C.S. Peirce's theory of truth, that is, the pillar of American pragmatism. Pierce's conception of truth in terms of the final opinion that is reached in the long run by a community of inquirers marks a significant departure from classic conceptions of truth, not only because it introduces a temporal dimension, but also because it explicitly connects it to groups of people and what those people do. To understand the rapid spread in recent times of pragmatism, it is proper to consider the relation between truth and persuasion.

The desire for consensus, which is a source of power, is rampant. Consequently, the desire for power is rampant. Social media has become a politically effective weapon in this regard. It represents the so-called *digital grey power*. Nevertheless, it must be noted that social media is only a means of multiplying easy consensus, but that the real engine of consensus is to be found elsewhere, in the eclipse of truth as the first icon to be honored. The eclipse of truth, in turn, is linked to the triumph of its 'disguise': persuasion. It is precisely this confusing overlap between truth and persuasion that leads us to conclude that 'believing to be right is the same as being right'! Indeed, those who think they are right are *convinced* they are right, but that

is not always necessarily the case. The prerequisite of this assumption is that being right or not only depends on the ego's decision. But the ego can persuade itself of the truth of something because willing is the ego's power. The ego, however, cannot decide on the truth of something because the truth is not within the ego's power. In fact, the opposite is true.

The political arena has always consisted in persuasions to be cultivated or incited. Nowadays, cultivating and inciting persuasions is infinitely easier than in the past, because the web is today's *agora,* reaching millions of people simultaneously. But the point is that, at the same time, the abyss that separates truth from persuasion has been lost. I call it an abyss because persuasion can also contain falsehood and illusion, not only truth. But persuasion doesn't know and cannot know it. Only truth knows it. Only truth, in fact, knows of itself and of the falsity of illusion, but falsity and illusion know nothing of the truth, otherwise they would be truths. Someone who is only persuaded is like a blind person who walks in the dark. Common experience confirms this even recently.

According to Greek philosophy, *A-lètheia* (*veritas* in Latin) is what is not hidden. The truth is that which is no longer obscure, because we have learned to see it. Post-truth, then, is the renunciation of searching for what is worthy of being believed. Post-truth settles for appearances, for likelihoods. If a shared world is only the result of either the imposition of one perspective on the others, or of a continuous exercise in tolerance, then it is not surprising that fake news is considered unpleasant but inevitable. In democracy, the notion of truth plays a politically crucial role, so much so that it can be affirmed that democracy is truth in power.

If we want to overcome the present situation, it is not enough to prove that a true discourse is still possible, and therefore it is not sufficient to define the modalities or procedures that enable such a discourse to be verified. Nor is it enough to attempt to regain human control over increasingly autonomous and self-referential technological processes capable of manipulating information. First of all, we must regain the taste for the truth and recover the idea that it is possible, despite everything, to say something true and regain the motivation to do so.

3. The considerations above help us grasp a potential risk for democracy due to the turbulent spread of social media: the risk of ochlocracy (mob rule). By its very nature, political representation is based on debate and on the exchange of opinions and interests. The parliamentary system is historically considered a "government by discussion". During the last century,

political parties, as opinion generators, were the essential hub of this system. Ever since its creation, this mechanism has always been imperfect and democracy has almost always found an antidote. Today's situation marks a turning point: social media's lightning-fast short messages are all the more effective the more disconnected they are from any kind of reflection and are all the more incisive the more radical they are. Algorithms favor the most simplistic – and most drastic – views, highlighting the disparity between "us" and "them". They do not generate opinions but capture and forge identities instead, exasperating an inclination which is well known to psychologists, whereby we pay more and more attention to what is already familiar. Not only that, but we recognize and adhere to the ideas we already have, which means we live in an "echo chamber".

In this context, the debate resists factual data. Imagine, for example, the positions of the "flat-earthers" who fight those who believe the Earth is round. As the well-known US jurist Cass S. Sustein shows (*On rumors. How falsehoods spread, why we believe them and what can be done*, 2020), fake news always prevails over its refutation or over true (i.e. verified) news.

The fact is that there is a discrepancy today between message and meaning, between demagogy and factual data. Devised to sell merchandise and generate profits, algorithms, the various social networks such as Facebook, Twitter or Google, by offering their services and products for free, are turning the users themselves into a profit-generating product.

Destructive populisms have always existed. Societies both suffer and overcome them. How? By clinging to the truth. Today, this old defense mechanism is failing. Post-truth threatens the antibodies that democracy generates to heal from the disease of populism and resist continuism (See S. Giusti and E. Piran, eds., *Democracy and Fake News*, London, Routledge, 2021). In such situations, the system slides down a slippery slope towards a "tainted" democracy, or rather towards a degenerated form of democracy that goes by the name of *ochlocracy*, i.e. mob rule, at the mercy of the multitudes and of their impulses and instincts.

The manipulation of public opinion through fake news is a real threat to the stability and cohesion of our societies. If so, it is not enough to remove fake news – which in any case must be done – but it is crucial to allow citizens to become responsible for what is circulated. On the other hand, it is increasingly necessary to train the same communication operators to use weighted sources on the net and have a responsible approach to social media. In this regard, I deem it proper to activate an institutional moment of confrontation between the operators in the production chain,

from publishers to journalists, and from search engines to social networks. To reward the quality of information it is necessary to move using and applying rigorous certification mechanisms, which can be applied not only in traditional areas, but also on the internet. (The analogy with what has already been occurring for some years in the area of social impact investing applies to the present case). This way, in addition to strengthening democracy, the principle of truth of the facts and the same deontological principles would be safeguarded.

WORD OF WELCOME

MSGR. DARIO EDOARDO VIGANÒ
⊙ *PASS Vice Chancellor for Communications*

Welcome, and thank you for sharing your time and knowledge on communications, which are indeed a particularly central issue today.

The Magisterium of Pope Francis determines a change of course after the long phase in which Papal Magisterium was characterized by what I define as the so-called "double pedagogy" towards the media.

In the encyclical letter *Laudato si'* (24 May 2015) he recalls how "We have to accept that technological products are not neutral, for they create a framework which ends up conditioning lifestyles and shaping social possibilities along the lines dictated by the interests of certain powerful groups. Decisions which may seem purely instrumental are in reality decisions about the kind of society we want to build" (LS, n. 107).

The epistemological approach to the world of the media changes by the reflection of the Church. Indeed, if Pope Francis affirms that "the Net is a resource of our time. It is a source of knowledge and relationships that were once unthinkable", he is not silent on the fact that "in terms of the profound transformations technology has brought to bear on the process of production, distribution and use of content, many experts also highlight the risks that threaten the search for, and sharing of, authentic information on a global scale".[1] And more radically, the Pope is aware of the fact that "mere training in the correct use of new technologies will not prove sufficient. As instruments or tools, these are not 'neutral', for [...] they shape the world and engage consciences on the level of values".[2]

Under these premises and in this framework, we structured this webinar that starts today and will develop during three sessions.

Thank you.

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[1] Francis, Message for the 53rd World Communications Day, «"We are members of one another" (*Eph* 4, 25). From Social Network Communities to the Human Community», 2019.

[2] Francis, Address to the Participants in the Plenary Assembly of the Pontifical Academy for Life, 28 February 2020.

Programme

15:50 *Platform, Power, Public Counter-Power: Governing Platformization in Europe*
José Van Dijck

16:10 *Digital Media: A New Political Economy of Light*
Ruggero Eugeni

16:30 Fides ex auditu: *The Christian Imperative of Communicating the Truth That Saves*
H.E. Msgr. Marcelo Sánchez Sorondo

16:50 *Between Truth, Legitimacy, and Legality in the Post-truth Era*
Anna Maria Lorusso

17:10 General Discussion

17:40 End of the Session

▶ **WEDNESDAY, 12 MAY 2022**

THIRD SESSION | THE FUTURE OF ART, EDUCATION, LAW AND DE-
MOCRACY IN THE DIGITAL AGE
Chairperson: Ruggero Eugeni

15:30 *Education for the Changing Media in a Changing World*
Marcelo Suárez-Orozco

15:50 *A Media Ecology for a Platform Society*
Fausto Colombo

16:10 *Digital Violence: A Threat to Human Dignity, a Challenge to Law*
Gabrio Forti

16:30 *Human Rights in Digital Society*
Luciano Violante

16:50 *Policy Solutions for Addressing Online Mis/Disinformation*
Anya Schiffrin

17:10 General Discussion

17:40 End of the Session

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Scientific Papers

How the Digital Technological Matrix Redefines Human Identities and Relations

Pierpaolo Donati

◗ *PASS Academician*

Abstract

The enhancement of human beings through digital technologies raises the question of evaluating whether and how the latter promote the flourishing (or, vice versa, the alienation) of what is properly genuinely human. The Author argues that the human/non-human distinction is revealed in the qualities and causal properties of the social *relationality* where human/artefacts (like AI/robot) interactions occur. It is about evaluating whether the technological mediation of the relations between human persons, both interpersonal and organizational ones, fosters or inhibits those relational goods that realize human fulfillment. In the Digital Matrix Land, being human means to learn how to manage the *relational imperative*, that is, how to face the concrete needs that a non-virtual relationship with the Other presents to us. The divide between social relationships that have *intrinsically* human qualities and powers and those that are human only in appearance is made difficult to trace due to the emergence of *Humanted* (the human augmented) and the hybridization of social relationships. But it does not disappear, which means that interhuman relations and those between humans and technologies are not comparable in spite of the supporters of the posthuman. The relational criterion becomes a discriminating factor in the making of new social forms.

Premise

The digital revolution brings with it great risks. As Pope Francis wrote (*Fratres Omnes*, 43):

> Digital media can also expose people to the risk of addiction, isolation and a gradual loss of contact with concrete reality, blocking the development of authentic interpersonal relationships. They lack the physical gestures, facial expressions, moments of silence, body language and even the smells, the trembling of hands, the blushes and perspiration that speak to us and are a part of human commu-

nication. Digital relationships, which do not demand the slow and gradual cultivation of friendships, stable interaction or the building of a consensus that matures over time, have the appearance of sociability. Yet they do not really build community; instead, they tend to disguise and expand the very individualism that finds expression in xenophobia and in contempt for the vulnerable. Digital connectivity is not enough to build bridges. It is not capable of uniting humanity. On the other hand, digital media are destined to spread more and more, and will have an exponential development, combining the internet, artificial intelligence and robotics. What can be done to avoid the evils feared by Pope Francis?

The thesis of my contribution is that the hybridization between the human and the digital is inevitable. If we want to avoid relational evils, we must understand the processes of hybridization and how to govern them by giving them human guidance.

When does digital-based communication really increase human identities and relations? The challenge of hybridization

The transition from legacy media to platform systems means an increasing intermediation of digital and virtual reality in the relationships between human people and their communications. What is communicated in terms of representations, images, knowledge and actions is mediated by what I will call the 'digital technological matrix'.

Communication – understood as making something common or shared – is the key to understanding how the self-relation emerges out of relations to others (Knudsen 2019). Since communication is a tension between social relationality and self-relationality, the means we use to communicate are decisive for the formation of personal identity (who I am for my Self) and social (who I am for others). Unavoidably human persons are 'relational subjects', which of course can be so in a more or less conscious, more or less reflective, more or less passive way, and so on (Donati and Archer 2015).

In a previous paper (Donati 2019: section 2.2.), I introduced the concept of 'Matrix Land' as the pervasive environment of digital (virtual) reality in which humanity is destined to live ever further from its natural origin. The Digital Technological Matrix (DTM) can be defined as *the globalized symbolic code that governs the creation of digital technologies designed to enhance or replace human action,* radically changing social identities and relationships. By modifying human action, digital technology conditions

the human persons who use it, to the point that the DTM changes their identities together with the social relations that constitute them (given that identities and social relations are co-constitutive).

The historical phase we are going through is characterized by the fact that existing, for people, means renouncing a stable identity, to enter the only possible dimension: that of liquidity, that is, that of changing, dissimilar, dissociated and continuously ambiguous identity (Cantelmi 2013). The digital transformation of reality achieved by the DTM intercepts, enhances and shapes some characteristics of the liquid man: narcissism, speed, ambiguity, the search for emotions and the need for infinite light relationships. The fundamental characteristic of techno-liquid sociality is the techno-mediation of the relationship. The fact of making the social relationship virtual leads to consider the digital connection as an imaginary equivalent of the inter-human relationship. This form of relationship is pervaded by an increase in the perception of loneliness, especially in the most active people on social networks. The "frictionless connection" could allow social networks to send user status updates without their permission: every time we watch a video on YouTube or read the news in an online newspaper or download an image, a song or other, the social network in use will automatically communicate it to other users. Social networks, abolishing any form of distinction between private and public, have already transformed friendship into sharing digital content. Here, then, is the new form of relationship: mainly technomediated, entrusted to the connection, very fast, exciting and full of online sharing. New forms of artificial intelligence are bursting into these scenarios, capable not only of performing an almost infinite number of tasks better than humans, but also of socializing, experiencing and letting them feel emotions and consoling and helping humans in their existential needs. The new forms of artificial intelligence question us about the new and increasingly confused boundaries between the human and the non-human. The technoliquid mind is basically different on the cognitive, emotional–affective and socio-relationship level from the analogical mind.

From a material point of view, the DTM is made up of very complex communication networks that operate through platforms managed by artificial intelligence (AI platforms) and by smart robotics (AI robots). What makes a difference compared to legacy media is the use of AI, that is, algorithms that influence, direct and manipulate communication in what has been called the infosphere. The infosphere was conceived and created as an environment whose function is to increase human abilities.

If we define digital–based enhancement as the use of technological tools (such as ICTs, AI platforms and AI robotics) to increase the capacities of human persons, groups and social organizations to overcome certain limitations, internal or external to them, the problem that opens up is understanding how and to what extent 'the human' and its dignity are modified.

The challenge is great due to two complex sets of reasons: First, because the human is difficult to define, as its boundaries are always historically open; second, because digital devices are not mere tools but rather social forces that are increasingly affecting our self-conception (who we are), our mutual interactions (how we socialize), our conception of reality (our metaphysics), our interactions with reality (our agency), and much more (Floridi 2015).

In a previous contribution (Donati 2019), I supported the thesis that enhancement through digital technologies is more human the more it allows those intersubjective and social relationships that realize the humanization of the person. This argument is not found in most of the current literature, where enhancement is assessed with reference to the body and/or to the mind of the individual and, in some way, to his relations, but not to social relations as such. The topic of 'relational enhancement', as I understand it, is underdeveloped, if not virtually unexplored.

The aforementioned thesis is motivated by how digital technologies increasingly change social and human relations. That is why, in a subsequent paper (Donati 2020), I proposed to analyze the processes of hybridization of social identities, relations, and social organizations in order to understand under which conditions the enhancement brought about by the digital revolution can shape organizational forms that are capable of promoting, rather than alienating, humanity.

The challenge posed by Matrix Land is that of a future society, however uncertain, in which the cognition of historical time will be lost and, with it, also the classical (Euclidean) notion of space. The expansion of information and communication technologies changes the balance between the three social registers of time (Donati 2021: 203): the symbolic register of time (time without history), the relational register of time (the time in which a relationship lasts, the historical *durée*) and the interactive register of time (the evenemential time that lasts the time of communication and then disappears). It is a question of evaluating the consequences of the passage from symbolic time to relational-historical and then to interactive time due to the speed and acceleration impressed by the digital media, which become the independent variable that redefine social time and space. By

increasing the speed and acceleration of life, time expands (people have the impression of living in a sort of eternal present that implies the idea of the end of history, the absence of the past and the future, and the cancellation of historical memory) and the social space (social distance) is reduced. In this way, social time and space, beyond a certain threshold of speed and acceleration of digital communication, are practically canceled.

Time and space become illusions. Virtual reality will prevail over human nature so that human beings will think that what previously appeared real to them was on the contrary pure illusion.[1] From the point of view of the radical supporters of the DTM, reality exists only in the mind. Virtual logic will supersede analogical thought. What then will be left of the human?

For those who are fully immersed in Matrix Land, human reality is not something to understand or explain in order to remedy some of its defects but only a set of images hidden in the back of the human brain, formed on the basis of electrical stimulations aroused by the perceptions of the five bodily senses. The senses capture all kinds of stimulations, which come from both human beings and from every other non-human entity, mixed in such a way that the human reality conceived in the brain takes on unprecedented characteristics. Which ones?

According to the developments in quantum physics and biogenetics, our processes of imagination will allow us tomorrow to create something that today seems impossible or imaginative. In Matrix Land, the Mind creates what future society will concretely make possible. For example, thinking that human beings can fly will lead society to allow them, in the near or distant future, to actually fly; obviously only when it shall have the right tools to make it happen.

In this contribution I would like to evaluate this perspective to understand what it implies from the point of view of what 'being human' could mean in Matrix Land.

The rationale of my argument is that, in order to achieve a truly human enhancement through digital media, it is not enough to improve the abilities and performances of an individual (its body and/or mind), or a social group or organization, but it is necessary to verify that enhancement operations have positive repercussions on the persons' social – that is 'relational' – life. I wonder what kinds of social relations between humans are favored (or impeded) by digital technologies and how the tools of digital enhance-

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[1] See 'The illusion of reality' at https://www.youtube.com/watch?v=NxiGgxL5btA, and many other similar websites.

ment affect human persons from the point of view of their intersubjective and social relations. Applying a digital device – no matter how intelligent it is – in order to improve the performances of an individual or a group of people is completely insufficient to affirm that this action of enhancement has properly human consequences. If so, under what conditions can we say that enhancement based on digital tools respects or favors human dignity rather than putting it at risk or damaging it?

Enhancement, Digital Revolution, and Social Relations

Although during the first industrial revolution, in the cultural climate of the Enlightenment, the human being was often conceived as a machine (see *L'Homme Machine* by J.O. de La Mettrie published in 1747). Yet, until the beginning of the 21st century, human relations have been regarded as distinct from mechanical relationships. The digital revolution threatens to erase this distinction. It is as if a new Enlightenment[2] is reformulating the idea of the machine and the idea of the human being within a single, conforming digital code. In this way, the relationships between humans and those between humans and machines (or animals, or whatever) become assimilable.

Accordingly, one wonders: What is the difference in relationality that connects human beings with mindless machines *compared with* the relationality between human and machines *equipped with an autonomous artificial mind*?

The crucial point concerns the possibility that the distinction between the personhood of humans and that of smart machines might disappear (Warwick 2015), so as to decree the death of the old humanism focused on that distinction (Breslau 2000). No wonder that even the distinction between interhuman relations and other kinds of relations (e.g. with non-human living beings or material things) disappears. This is the putative miracle of the DTM. The *I-Thou* relationship theorized by Martin Buber can now be applied to the relations that people have with their super-computer, a bat, or extra-terrestrials, provided that they have a first-person perspective, since "thou-ness is not distinct to humans".[3]

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[2] Let us think of Luhmann's sociological neo-Enlightenment (see Baecker 1999).

[3] As suggested by Porpora (2019: 37): "a thou is what bears the character of an I (or at least per Buber what is addressed as such). But then what is an I? An I is anything to which it is appropriate to attach what Thomas Nagel calls a first person perspective. (…) Put otherwise, an I or what is properly addressed as such, i.e., a Thou, is an experiencing subject, where an experience is not just a matter of thought but also of feeling. (…) If in Nagel's sense there is something it is like to be a bat, meaning it has what Nagel calls a first-person perspective, then, per my own argument, a bat is a thou. Which means

In my opinion, this view is based on the assumption that the identity of an entity relies entirely upon its mind (first-person perspective) and does not depend on the quality and structure of the relations that their physical or body structure, albeit enhanced, can allow. This argument forgets that between identities and relationships there are non-random connections that are specific generative mechanisms, on which the outcomes depend, for instance the flowering or alienation of the human (as we will see by commenting on the next figure 1). If we understand relationships as expressions of a self-reflective mind (which thinks in the first-person), we digitize human beings in the same way as animals and any other object.

In order to understand the specific identity of the human mind, it is useful to assume that a mind, in the abstract, is an effect (a relational entity) emerging from interactions between its constitutive elements working together, making it a product of three components: *brain + stimulating factors (internal & external) + the autonomous contribution of the relations between brain and stimulating factors,* which is 'the third' component of the emergent effect that is the operating mind.

Does the AI platform's mind have the same third component (the autonomous role of the connecting relations) as the human mind? My answer is negative: the *human and artificial minds are two incommensurable orders of reality because of their structurally different relationality, both internally and externally*.

Identity is formed in relationships, and vice versa, relationships are formed through identities, which means that the process of interactions can have different outcomes, depending on whether the process occurs in a conflationary way between identity and relations or instead distinguishes them analytically over time as realities of different orders. Not any kind of interaction leads to the fulfillment of the human person. Between an arrangement in which interactions are of a reproductive type (morphos-

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that thou-ness is not distinct to humans. (…) Care, I would say, is the proper attitude to adopt toward a thou, human or not. To be clear, it is a non-instrumental care of which I speak. I care for my car but mostly because I do not want it to break down on me. The care I am suggesting that is properly extended to a thou, human or not, is concern for them as ends in themselves". It seems to me that, according to Buber (and I would like to add Ricœur and Lévinas), a Thou should be another entity like the I (Ego). If it were an entity that is neither a Thou nor an It, but a personification of something (for example a tree for a Taoist, the sky for a Confucian, or the deities of woods and animals according to religions such as Hinduism and Buddhism), a question arises: do these entities speak to the Ego or, on the contrary, is the Ego talking to them? Or, again, is it the Ego who tells them what they have stimulated in himself?

tatic) and an arrangement in which they are of a chaotic type (turbulent morphogenesis), there are innumerable different configurations of which it is difficult to appreciate their more or less humanizing character. Consider, for example, the self-description of a ground-breaking hightech company of AI researchers, neuroscientists, psychologists, artists and innovative thinkers called *SoulMachines*. This company aims at re-imagining what is possible in Human Computing with the following declaration on its website:

> We bring technology to life by creating incredibly life-like, emotionally responsive Digital Humans with personality and character that allow machines to talk to us literally face-to-face! Our vision is to humanize computing to better humanity. We use Neural Networks that combine biologically inspired models of the human brain and key sensory networks to create a virtual central nervous system that we call our Human Computing Engine. When you 'plug' our engaging and interactive Digital Humans into our cloud-based Human Computing Engine, we can transform modern life for the better by revolutionizing the way AI, robots and machines interact with people.

It is then a matter of analyzing what kind of hybridization between the human being and the machine is produced by the different forms of enhancement, and what consequences are produced in social relations, and therefore in the whole organization of society.

I would like to analyze this topic by looking at how the historical evolution of technologies is changing both the natural order and the social order through the practical order of reality.

Confronting the Digital Matrix: The Emergence of the Humanted

The Transition to the Humanted

Human identity, and its humanization, passes through the relationality of the mind in connection with its internal and external environments. It becomes essential to understand how these relationships change in different technological environments.

In table 1, I summarize the transition from the pre-DTM historical phase, to the advent phase of DTM and to the further development of DTM.

(I) In the pre-Matrix phase, machines can be more or less sophisticated, but they are not 'thinking'. Therefore, human beings use them as instruments that can be mastered, even if the users are also affected by the instruments they use. In any case, human relationships remain clearly distinct from

machinic (automatic) relations. Knowledge and communication are of an analogical type. Society is still seen as the exclusive domain of human beings, who are supposed to be its architects and its 'center' (anthropocentrism).

(II) In the transformation phase, the traditional sectors of society that operate in analog mode (including analog machines) are increasingly replaced by smart machines eventuated by the digital revolution. Behind these innovations, there is the visionary idea of a 'society of mind' that is cultural, scientific, and practical. This visionary idea is to think and configure society as it is to build a Mind that works on the basis of innumerable elements that are in themselves 'stupid', but, all working together, make 'the whole' – i.e. society itself as a mind – intelligent. According to Marvin Minsky this is the idea behind the construction of both the AI and the society they will create. In his words: *Society of Mind* is a "scheme in which each mind is made of many smaller processes. These we'll call *agents.* Each mental agent by itself can only do some simple thing that needs no mind or thought at all. Yet when we join these agents in societies – in certain very special ways – this leads to true intelligence" (Minsky 1988: 17). From my point of view, the DTM is the practical realization of this vision of society, in which agents are mere processes, neither reflexive people nor social subjects capable of expressing and putting into practice intelligent and meaningful projects. Such a DTM imposes itself as an impersonal and anonymous force. The tendency to replace the analogical code with the digital one has the consequence of eroding the distinctions between human-human relations and human-machine relations, because human relationships are replaced by the operations of smart machines and assimilated to their logic and their characteristics.

Current technologically advanced societies represent a middle-step between a society where there is no artificial intelligence and a society in which smart machines are endowed with minds (i.e. autonomous cognitive processes), so that new kinds of 'persons' (like 'electronic persons' and virtual networked organizations) become 'agents' on their own.

In this transitional phase, human rights are increasingly at stake due to what Teubner (2006: 240-41) calls 'the anonymous Matrix of communication':

> The human-rights question in the strictest sense must today be seen as endangerment of individuals' body/mind integrity by a multiplicity of anonymous and today globalized communicative processes (...) Failing a supreme court for meaning, all that can happen is that mental experience endures the infringement and then fades away

unheard. Or else it gets 'translated' into communication, but then the paradoxical and highly unlikely demand will be for the infringer of the right (society, communication) to punish its own crime! That means turning poachers into gamekeepers.

(III) A society driven by DTM seems to be the point of arrival of what Karl Marx called the administration of things by things. Political institutions and civil actors try to dominate the new technologies, but more and more they realize that the power of intelligent machines changes their way of thinking and relating to each other.

These changes are marked by the passage from (I) the analogical symbolic code of the early modern society, to the (II) binary code of the post-modern society, to the (III) quantum code (qubit) of the trans-modern society.[4]

What I want to emphasize is the transformation of social relations. (I) The *analogical code* is that of classical ontology and epistemology in which symbols or models are applied to a constructed or artificial reality on the basis of analogies with a reality conceived as natural. Thus achieved is a correspondence between two different phenomena governed by the same laws, which therefore can be subsumed under a single model, *social relations seen as natural*. (II) The *binary code* refers to a dialectical ontology and epistemology in which 0 and 1 are used alternatively to produce dynamic and dialectical states that can in any case generate a certain stability at the macro level under certain very particular conditions. *Social relations become a built reality of procedural and transactional character*. (III) The *quantum code* (qubit) refers to the ontology and relational epistemology in which 0 and 1 overlap and intertwine (the phenomenon is called entanglement) in procedural states generally lacking in stability both at the micro and macro levels. *The social relationship now becomes purely virtual*. As Malo (2019) reminds us, social relationships have their own energy or what Aristotle called *energeia*. From my point of view, in the social sciences, the energy of the social relation occupies a position analogous to that of the quantum in the physical sciences. Just as quantum mechanics provides only a discrete set of multiple values for a fundamental variable that cannot be further broken down, so does my relational sociology for social relations.

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[4] The term *trans*-modern indicates a caesura or profound *discontinuity* with modernity, while the term of late or 'post' modern indicates the developments that derive from bringing modernity to its extreme consequences on the basis of its premises.

(I) Before the Digital Matrix	(II) Transition to The Digital Matrix	(III) A society driven by the Digital Matrix
'Man architect' (Homo faber)	'Self-constructed man' (Homo sui-construens)	'Virtual (digital) man' (Homo digitalis)
Analogical code (classic ontology & epistemology)	Binary code (dialectic ontology & epistemology)	Quantum code (qubit) (relationalist ontology & epistemology)
The Human being can design and master the machine, which is an instrumental and passive tool for practical activities	Technologies become more intelligent and autonomous so that their relations 'redefine' the human being	Human beings become accustomed to digital relations and take digital features from them (generation of the *humanted*)
Identities and social relations are supposed to reflect given for granted human features, since knowledge & communication are *analogical*	Identities and social relations become mentalized and hybridized, because knowledge & communication become *digital* (algorithms)	Identities and relations depend on the type and degree of reflexivity exercised on the processes of *mentalization* & *hybridization* of knowledge and communication (*reflexive hybridization*)
Society represents itself as immediately 'human' (anthropo-*centrism*)	Society represents itself as a 'collective (digital) mind' (anthropo-*eccentrism*: separation between human and social)	Society represents itself as a multiplicity of social worlds differentiated according to the guiding distinction: *cyber-humanted/human*

Table 1. How the Digital Technological Matrix progressively transforms humanness and society.

One wonders where society is going. Certainly, as far as the human person is concerned, the result of this dynamic will be the emergence of an 'augmented human', which I call a *Humanted* (i.e., a *human-augmented*), a human person modified by technologies who is both the product and producer of the hybridization of society. The augmented human identity will enjoy a strengthening of natural abilities but will also experience new problems of relationship with herself, with others, and with the world.

What will be its future configuration when DTM will be further developed, to the point of acquiring its autonomy with respect to human subjects? Obviously, a series of scenarios are opened here for a society led

by DTM. To put it shortly, these scenarios depend on two main processes.

The first process favors the *mentalization* of social relations and therefore of both personal identity and the representation of society. It makes Mind the cultural model for the whole society, replacing the old metaphor of society as industrialized labour, the one that the twentieth century called 'machine civilization' (Miller 1979).

The second process is the *hybridization* of social relations, which is closely linked to the first. It derives from the fact that social relations between humans, instead of being distinct from digital ones, tend to incorporate certain characteristics of the latter, and therefore hybridize. People are induced to think and act 'digitally' instead of analogically.

In the current use of AI platforms, there is something that binds the human person and the technological artifact, while still differentiating them. They differ as they must 'adapt' to each other if they want to work together. This adaptation takes place precisely via the interactions and transactions they establish between them. Their feedbacks are interactive and transactional, but not strictly relational (Donati 2013), which means that one incorporates certain modes of operation of the other, but the relationship remains problematic.

The problem can be understood in the words of Melanie Mitchell (2019) when she states that machine learning algorithms don't yet understand things the way humans do – with sometimes disastrous consequences. Current progress in A.I. is stymied by a barrier of meaning. Anyone who works with A.I. systems know that behind the façade of humanlike visual abilities, linguistic fluency and game-playing prowess, these programs do not – in any humanlike way – *understand* the inputs they process or the outputs they produce. The lack of such understanding renders these programs susceptible to unexpected errors and undetectable attacks.

If one argues that personhood is not in principle confined to those entities that have a human body (or traceable to human bodies, as in moral persons), or is compatible with changing any part of the human body because personhood consists in possessing the first-person perspective, as Baker claims, the consequence is that personhood is *mentalized*. Mentalization consists in the fact that the intersubjective production of meanings (semiosis) is made virtual (Arnold 2002). The mentalization and hybridization of identities and social relationships promotes the anthropomorphic attribution of human characteristics to realities that are not human. Personification of robots, for instance, is precisely a strategy of dealing with uncertainty about their identity, which moves the pattern of attribution

of identity from the causality induced by humans to that of the double Ego-Alter contingency, which presupposes the robot's self-referentiality. The question is: does this self-referentiality produce the same emerging effects of inter-human relations?

The relationship between the human person and AI/robot becomes a mind-to-mind relationship. Deprived of a correspondence between two human bodies, emotional, sentimental, and psychological dimensions become an enigma. By losing the relationship with their specific bodily support, dialogue, conversation, and communication assume the character of a simulated, emulated, fake, or fantasized reality. If I think to relate myself to a star that is in a galaxy billion light-years away from me, I imagine a relationship that is purely mental, but which has an effect on me, because it redefines my identity.

As Henry Atlan (1985: 96) wrote:

> Ce qui nous pousse en fait à placer la barrière de façon arbitraire entre les hommes et le reste, c'est l'expérience immédiate d'une peau, d'un corps ou de mots, que nous faisons d'un autre système, extérieur à nous-mêmes. Cette expérience est pré-scientifique ou post-scientifique et c'est un souci d'éthique de comportement plus que de connaissance objective qui nous fait placer intentions, projets, créativité et en même temps responsabilité et liberté, à l'intérieur d'une peau qui enveloppe un corps dont il se trouve que, de près ou de loin, il ressemble au mien.

For example, by attributing personality to a robot or AI, sexual identity is mentalized, since it no longer corresponds to a defined body but to an indefinitely hybridized medium. Entrusting family, friendship or business communications to an AI/robot instead of face-to-face relationships leads to mentalizing relationships rather than considering their concreteness, their materiality.

Supplementing the first-person perspective by adding reflexivity and concerns in order to delineate personal and social identities can help to avoid these outcomes to some extent, but it is not enough to make social relationships adequate to meet human needs related to physicality. As many empirical investigations reveal, relationships between family members who frequently prefer to communicate through the internet rather than face-to-face, gradually take on the virtual logic of social networks: interpersonal relationships are decomposed and recomposed (unglued and re-glued), become more fragile, while communications are privatized on an individual basis. In sum, family relationships become mental rather than analogical

(Cisf 2017). If a person does the daily shopping in a supermarket through the internet rather than going in person to the shops and meeting other people, she ends up impoverishing her human relationships and absorbs, unwittingly, a relational logic that is hybridized with how the supermarket *app* operates. The private lifestyle, at least in consumption, is made accessible to the knowledge of strangers and the boundaries between private sphere and public sphere collapse. The strength of DTM is nourished through the diffusion of a mentalized environment of reference common to all those who communicate, which, moreover, is retained and manipulated through big data. People who communicate outside DTM become socially irrelevant.

The Process of Hybridization

A society driven by DTM can evolve in various directions. In my opinion, the scenarios for a 'digital society' will be different: (i) depending on the type and degree of control and mastery that humans will have on DTM; (ii) according to the type and degree of reflexivity that people exercise on the processes of mentalization and hybridization of relations: and (iii) according to the forms of governance of the organizations and economies that use DTM.

Society will be less and less interpretable as human in a direct and spontaneous way, because human relations will be increasingly mediated by DTM. With all this, the human does not disappear, but what was once called 'human society' must be intentionally re-generated as 'society *of the* human', characterized by being produced through relational reflexivity on the human, through new distinctions between the various forms of social relations that generate different types of society. The so-called human society has been swept away by functional differentiation (Luhmann 1990), and the 'society of the human' can emerge only through a supra-functional relational differentiation able to challenge the cyber-society.

If an organization or social network wants to maintain the basic characteristics of the human, it will have to develop a culture and practices that give people the ability to reflect on the hybridization of social relations in order not to become the slaves of machines.

This problem is maintaining and empowering human agency, which is threatened by a social structure (the hardware of DTM) that has become the engine of change and that bypasses the agency by continuously adapting to itself a cultural system which in turn overrides human agency without giving it the ability to exercise its personal and relational reflexivity.

I summarize this process in Figure 1 that formulates, within the framework of relational sociology, the SAC (structure-agency-culture) scheme of morphogenesis suggested by Archer (2013: 1-21) so to meet the demands for greater clarification (Knio 2018) concerning the key role of relations in the double and triple morphogenesis of agency.

To be short, the core idea is that, when the human agency is unable to influence the structure, the latter determines the morphogenesis of agency in such a way as to reduce or prevent its reflexive capacities. In this case, the structure directly modifies the cultural system without agency reacting, and in this way the dominance of DTM is reinforced, which hybridizes identities and social relations. Hybridization proceeds to the extent that reflexive agency is blocked, so that the structural changes of DTM can change cultural processes without resistance and continuously reshape the identities and relationships of human persons. The latter becomes a passive *Humanted*.

The case of young people called *hikikomori* is a good example in this regard. Hikikomori refers to reclusive adolescents or adults who withdraw from society and seek extreme degrees of isolation and confinement. Estimates suggest that half a million Japanese youths have become social recluses, as well as more than half a million middle-aged individuals. Although these people are characterized by personal psychological disorders, empirical research has shown that hikikomori syndrome is powerfully exacerbated by digital communication technologies, such as the Internet, social media and video games.[5] Many of them show signs of Internet addiction. Video games and social media tend to reduce the amount of time that people spend outside and in social environments that require direct face to face interaction. The emergence of mobile phones and then smartphones has deepened the issue, given that people can continue their addiction to gaming and online surfing anywhere, even in bed.

Many examples of *humanted people* can be referred to the influence of ICTs (i.e. the internet and social networks) on phenomena such as the change of one's sexual identity, cybersex relations, how women and men use the online role-play to explore and change their gender, identity, and

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[5] Masaru Tateno et al. (2019). 'Internet Addiction, Smartphone Addiction, and Hikikomori Trait in Japanese Young Adult: Social Isolation and Social Network'. *Frontiers in Psychiatry*, 10 July 2019 (online); Yang Yu et al. (2019). 'Susceptibility of Shy Students to Internet Addiction: A Multiple Mediation Model Involving Chinese Middle-School Students'. *Frontiers in Psychiatry*, 29 May 2019 (online).

sexuality, and how people modify their couple and family relationships by absorbing into them the characteristics of non-human entities, becoming *actants* (according to Bruno Latour's ANT theory).

Digital technology allows men and women of the third millennium to be without constraints, to technomediate the relationship without being in relationship, to connect and to build liquid, changing, and at any moment fragile bonds, devoid of substance and verification ready to be interrupted. The DTM combines Musil's man–without–qualities with today's man–without–bonds, in a sort of continuous overlap between analog and virtual reality that defines the new horizon of the human identity theme. The crisis of male and female identity is its most obvious expression. The identity, that is the idea that each of us has of him/herself and the feeling that each of us feels of him/herself, is therefore in deep crisis, and the new paradigm is the ambiguity that is proper to the identity of the *humanted* (the human being enhanced by technology), often seen as a transition to the cyborg. The fundamental characteristic of technoliquid sociality is the pervasive technomediation of the relationship that changes identities.

Leaving the field of phenomena just mentioned, we can find other types of hybridization in the field of organizations and work. Take the case of Boeing 737 Max-8 aircrafts that have fallen in recent years (for example, that of the Ethiopian Airlines which crashed near Addis Ababa airport on March 10, 2019). True or not, one of the explanations for the accident was that the aircraft's software – that is, the AI that had to monitor it – forced the pilot to do certain operations, not left to his discretion, in order to avoid possible terrorist hijacking. In the presence of an unexpected event (probably fire on board), the AI did not allow the pilot to do those maneuvers that could have prevented the fall. In a sense, the pilot's identity (*humanted*) and his relationships to maneuver the plane were hybridized by the AI. This example is emblematic for all those cases in which an AI, although created to ensure the achievement of positive ends, prevents the use of relational reflexivity by those who drive the machine (*passive humanted*) and leads to a negative outcome of the action system or organization. The remedy is not sought in strengthening the human agent (the pilot as *proactive humanted*), but in designing a more sophisticated AI that can replace him. A well-known case is that of managers who entrust an AI with the task of establishing the duties and shifts of company employees so that, as AI does not allow the manager to use adequate personal and relational reflexivity (weakened or impeded agency in figure 1), a lot of employee dissatisfaction and an overall negative business climate are generated (cultural domain),

which leads to seeking a remedy by replacing employees with robots, AI or other artificial instruments (structural domain).

We can say that *being human in Matrix Land means having the chance to exercise the qualities and causal powers of human agency in such a way as to react to structural and cultural conditioning by reflexively redirecting social relations towards human persons*. In figure 1, this means empowering the weak relations (dotted lines – – – >) and making them stronger and proactive (solid lines ➔). To exert effective reflexivity, agency needs a favorable social environment, to configure itself. In other words, to put into practice the reflexive imperative, it is necessary to satisfy the *relational imperative*, that is, how to face the concrete needs that a non–virtual relationship with the Other presents to us. This implies control and regulation of the conditioning social structure in order to prevent it from colonizing the cultural system in such a way as to bypass human agency.

When human agency, although influenced by DTM, can react to the latter with an adequate relational reflexivity (strong relationality), we see the emergence of a proactive augmented human (*Humanted*) as in figure 2.
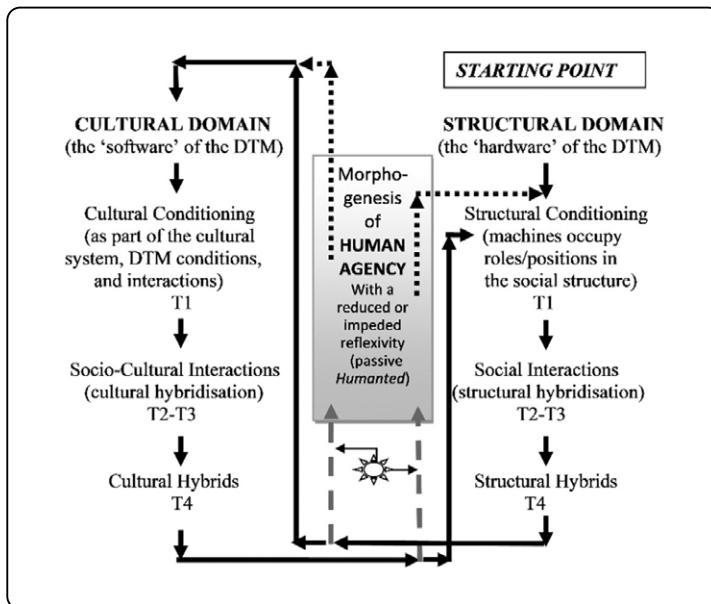
Figure 1. The morphogenetic cycle of SAC (structure, agency, culture), run by the DTM, that generates the hybridisation of society and the passive Humanted. Legenda: when the agency is blocked (within dotted lines) the structure and culture prevail and change morfogenetically each other (solid lines) with the agency being more passive.
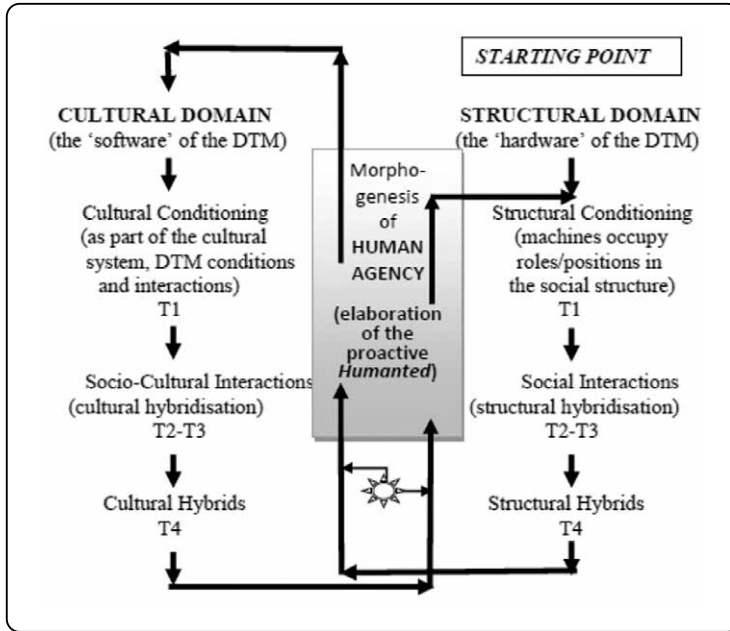
Figure 2. The proactive *Humanted*.

The future of the world depends on the types and degrees of mastery over smart digital machines (ITCs, AI, platforms, robots). I cannot discuss here the various political, economic, organizational, and legal instruments that can serve this purpose at the macro and meso levels.[6] Al–Amoudi (2019: 182) has made clear how "managerial practices have contributed to dehumanising contemporary societies, and that management studies bear an important share of the blame".

To counter this drift, we should understand the importance of the ontic necessity of relations in organizational studies.[7] Very important are studies on human–robot interaction (HRI) to assess the relational implications. At the micro level, it is necessary to develop a cybernetic literacy that does not limit itself to educating the individual as such, as proposed by Pierre Lévy (1997), but regards the way of operating networks in which individuals are inserted. Only in this way will we be able to prevent DTM from producing

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[6] See for example House of Lords (2018).
[7] For instance, in marketing systems: see Simmons (2018).

new segmentations and inequalities between social groups, due to the new divides created by the differentiation of the networks of social relations and the differentials in cyber literacy between people. It is at this point that we need to address the discourse on human dignity and human rights in the face of the society led by DTM.

Many wonder why the human–AI robot relationship is different from the human–human relationship. Some believe there are no differences (e.g. M.S. Archer). In my opinion, however, the Ego-Alter interaction will never be able to create a relationship similar to the interhuman one. This impossibility is due to two reasons: first, the human action and the behavior of AI robots are radically dissimilar due to the fact that the mind–body relationship in the human person is not replicable in the robot's mind (AI)-machine relationship; secondly, since the relationship is an emerging phenomenon, the relationship that emerges from human–human interaction necessarily has different qualities and causal properties from that which can emerge from human–AI robot interaction.

When and How Can an Organization Using Digital Technologies Achieve Human Enhancement?

When Is the Enhancement Pursued Through Hybridization Human?

How do we distinguish when the enhancement practiced by an organization that works with digital technologies is humanizing rather than dehumanizing or even non-human?[8]

To make these distinctions, it is necessary to clarify what is meant by 'human' applied to the effects that enhancement technologies have on people and their relationships in a hybridized organization.

I do not want to enter the debate about the potential comparability of AI platforms or robots and humans. I limit myself to observing that human ontology is incommensurable with respect to the ontology of artefacts. Even if AIs can be made 'sentient', their subjectivity can never be human. I say this because I believe that *personhood exists only in the relationships* both between mind and body and between the person and the surrounding

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[8] I mean 'dis-humanizing' enhancement as that which degrades the human (for example, using big data to condition consumer behavior), therefore distorting the human which, however, maintains its own potentiality, while 'non-human' means an action or intervention that reduces the human person to a simple animal, thing, or machine (for example, grafting a nanobot into the human brain to reduce the person to a slave).

world.[9] Human dignity exists and is to be protected and promoted in its social relationality. Baker's argument according to which "artefacts have as strong claim to ontological status as natural objects" (Baker 2004: 112) must be subjected to a critical examination because the ontological status of the human body cannot be equated to that of an artefact like an AI.

In a sense, even social organizations are artifacts, to which we attribute a legal personhood.[10] Organizations equipped with smart machines increase their intelligence and creativity to the extent that they are hybridized, that is, in which human subjects increase the 'awareness of their consciousness' just because they use AI platforms or robots. Using intelligent artefacts allows workers to be more available for non-routine and more creative action. The question is in what sense and in which way do these organizations ensure the human qualities of the relationships between their members and the relationships that those who benefit from the activities of that organization will have?

To answer this question, it is not enough to refer to the ability of the individual members of the organization or its customers. It is necessary to consider the quality of the relationships created between the members of the organization and the quality of the relationships that its customers can put in place following the use of AI platforms and robots.

To understand hybridized organizations in the sense understood here, it is necessary that personhood be not defined for its individual and self-referential abilities but be defined in a relational way to distinguish between the different types of relationships that are created in the organization with the introduction of intelligent machines.

In short, while individual human personhood requires possession of the first-person perspective, when we refer to a social organization as a relational subject we must reason in terms *relational personhood*. To manage the hybridized relationships of an organization in a human way, individual personhood must be the expression of a mind that works in connection with a human body (O'Connor 2017), able to reflect not only on itself and on its context, but on the relationship to the Other as such.

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[9] See the emergence of the human person from the links between body and mind in Smith (2010).

[10] We already attribute a subjectivity to fictitious (legal) persons, who are ontologically artefacts, such as corporations, civil associations, schools, hospitals, banks, and even governments.

In hybridized social relations, there *coexist* both characteristics of the interhuman relationship – which is structured according to the *Ego-Alter* double contingency – and characteristics of the *Ego-It* digital relationship. In the latter, the expected contingency on the part of *It* is characterized by a drastic reduction compared to the complexity of the double contingency Ego-Alter.[11] If an organization hybridized by new technologies wants to avoid the reduction of *Ego-Alter* relationships to *I-It* relationships, it must maintain the high level of contingency in the *Ego-Alter* relationship. This requires the adoption of a second person's perspective beyond that of the first person, necessary to communicate sensibly with the *Alter*, and in particular to recognize *Alter*'s differences and rights (Darwall 2007). In my opinion, admitted and not granted that the AI can act according to the perspective of the first person, to play the role of *Alter* (and vice versa *Ego*) in the relationship with a human person, the AI should be able to assume the perspective of the second person. The perspective of the second person implies that the agent (in this case the AI) should be able to act as a "Self like an Other" (*Soi-même comme un autre*),[12] which means that the AI should act like a human being and, as such, evaluating the good of the relationship (the relational good between *Ego* and *Alter*). This is impossible as long as AI does not have the same constitution as a human being.

In opposition to this statement, there are scholars who think that sentient AI can be (or become) capable of 'reflecting' on the Other and/or the relational context as if they were an *Alter* in the Ego–Alter relationship. At this point we find the problem of clarifying whether or not there are differences, and if so which are they, between humans and AI in social life, and, consequently, if any, between the dignity of one and the other.

The talk about personhood and human dignity

Charles Taylor (1985: 102) observes: "what is crucial about agents is that things matter to them. We thus cannot simply identify agents by a performance criterion, nor assimilate animals to machines … [likewise] there are

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[11] On the issue of contingency reduction respectively by technology and human beings: see Luhmann and Schorr (1982), and Luhmann (1995).

[12] Ricœur (1990: 380): "l'Autre n'est pas seulement la contrepartie du Même, mais appartient à la constitution intime de son sens". It may be useful here to clarify the meaning of the terms used by Ricœur: "Soi" means "le soi (selbst, self) se distinguant de l'ego (je, Ich, I) non réfléchi". "Même" means "l'ipséité (← *ipse* identité réflexive) s'oppose à la mêmeté (← *idem* ressemblance, permanence)", and "Autre" means l'ipséité ne se définit pas contre l'altérité, mais par elle".

matters of significance for human beings which are peculiarly human and have no analogue with animals". I think the same is true when it comes to AI, and not just animals.

One of the things that matters is social relations. They have a significance for human beings which are peculiarly human and have no analogue with animals or AI. To clarify this point, I suggest making a parallel between the distinction first/second-order desires made by Harry Frankfurt (1971), as essential to the demarcation of human agents from other kinds of agent, and the distinction first/second-order relations.

Human beings are not alone in having desires and motives, or in making choices. They share these things with members of certain other species, some of which even appear to engage in deliberation and to make decisions based on prior thought. This is possible also for AI. *What is distinctive of a human person is the capacity to have a second-order relation when she has a desire or makes a choice whose object is her having a certain first-order relation.* The first-order relation is an expression of inner reflexivity that can be present at certain times also in some animals and perhaps in some future AI, but only the human person can have second-order relationships that are an expression of relational reflexivity (Donati 2013). After all, the higher morality of human agency does not lie in the first-order relationship, but in the second-order relationship.

This point of view is particularly important because AI can be actors of new types and forms of relationships that differ greatly from the relationships that animals can have with human persons. Human–animal relationships belong to the natural order, while human–digital artefacts relate to the orders of social and practical realities of applied technologies. The actor–network–theory is flawed precisely because it conflates all these orders of reality.

The 'relationality criterion' should not be understood as a 'performance criterion' or another behaviourist criterion. G.H. Mead's view, taken up by R. Harré and others (see Jones 1997: 453), that selves exist solely in lived discourse and derive their dynamics and intentionality from speech acts is fallacious precisely because social relations also exist without linguistic acts and they reflexively influence the self also in an indirect or unintentional way. In my view, the 'relationality criterion' becomes more and more important and significant precisely because the DTM dramatically amplifies the phenomena of hybridization of social relations and, more generally, it is the causal factor of a huge 'relational revolution' in the globalized world (Donati 2012).

As far as I know, no scholar has dealt with the issue of distinguishing human-AI relations in respect to human–human relations *on the basis of a general theory of the qualities and causal properties of social relations in themselves*, both in terms of dyads and complex networks.

Some suggestions can be found in the thesis advanced by David Kirchhoffer (2017) who rightly argues that the problem of dignity talk arises because proponents of various positions tend to ground human dignity in different features of the human individual. These features include species membership, possession of a particular capacity, a sense of self worth, and moral behaviour. He proposes a solution to this problem by appealing to another feature of human beings, namely *their being in relationship over time*.

This perspective can enable us to understand dignity as a concept that affirms the worth of the human person as a complex, multidimensional whole, rather than as an isolated undersocialized entity (rational choice theory), or a juxtaposition of 'dividual' features (Deleuze), or the product of functional differentiation (Luhmann) (see Lindemann 2016). Kirchhoffer elaborates his argument by observing that the concept of human dignity can serve both a descriptive and a normative function in the enhancement debates. At a descriptive level, asking what advocates of a position mean when they refer to human dignity will reveal what aspects of being human they deem to be most valuable. The debate can then focus on these values. The normative function, although it cannot proscribe or prescribe all enhancement, approves only those enhancements that contribute to the flourishing of human individuals as multidimensional wholes.

One can agree with the idea that a person's ontological status rests on being a centre of value, 'integrally and adequately considered', but the foundation of such worth remains obscure. What is missing in Kirchhoffer's argument is the clarification of what values are distinctive of the human and which characteristics must have the relationships that make them flourish. The argument that human dignity stems from the fact that the human person is a multidimensional whole is necessary but not sufficient. We need to enter into the analysis and evaluation of the vital relationality that characterizes that 'whole' and makes it exist as a living being that has a structure and boundaries, however dynamic and morphogenetic.

Generally speaking, in the so-called 'relational turn' of the last two decades mentioned by Raya Jones,[13] social relations have been almost always

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[13] Raya A. Jones (2013: 405) writes: "Relationalism refers primarily to a standpoint in social psychology. This standpoint is premised on the threefold claim that persons

understood as interactions and transactions, instead of 'social molecules' to which we can attribute human qualities and properties or not. When social relationships have been observed as more substantial, stable and lasting phenomena, their characteristics have been treated in terms of the psychological (mainly cognitive) qualities deriving from the related terms, that is, human persons and AIs. The attributions of qualities and properties to the human/AI relationships as such are, mostly, psychological projections of human persons on entities to which is attributed an ontological reality that is the result of subjective feelings and mental abstractions.

In short, social relations have been treated as psychological entities, instead of being considered emergent social facts in which we can objectively distinguish human characters from those that are not. It is instructive, for example, that, speaking of the relational turn, Jones refers to authors such as G.H. Mead and Lev Vygotsky. He quotes the saying of Charles Cooley "Each to each a looking-glass. Reflects the other that doth pass" considering it as the premise of the interactionist relationalism, and then he still appreciates the perspective of Turkle according to which "*in the move from traditional transitional objects to contemporary relational artefacts, the psychology of projection gives way to a relational psychology, a psychology of engagement*".

Jones wholly ignores all those perspectives according to which social relations cannot be reduced to social psychological traits. The researches cited by Jones only show that a growing number of scholars treat human/ AI relationships as they study relationships between human and domestic animals, thinking that AI will do better than animals. Of course, those who love dogs or cats treat them as human beings: they grow fond of them, talk to them every day, adapt to their needs in their own relational life, and so on. But dogs and cats are not human beings. Of course, AIs can have many more human characteristics than dogs and cats: they can talk in turn, they can reciprocate smiles and gestures of sympathy, they can perform orders much better than any other pet. But they cannot have that 'complex' of qualities and causal properties that make up the human and generate other kinds of relationships, which are ontologically – not just psychologically – distinct from those with animals. The problem is that the researches cited

exist by virtue of individuals' relations to others; that, cognately, 'selves' are an emergent property of semiotic I-You-Me systems; and that therefore the task for social psychology is to identify 'regularities' of interrelations between specific cultural practices and particular experiences of self'". This relational turn is derived mainly from authors such as Gergen and Harré.

by Jones lack a generalized paradigm to define precisely and substantively what is meant by social relation.

Jones (2013: 412) suggests that, perhaps, in the future, "robots may enter as relational partners" as if they were human. She does not distinguish between social relations between humans and relations between humans and artefacts from the point of view of social ontology. She seems to share the idea that "it is the human's perception of the relationship that humanizes the machine" (Jones 2013: 415), thus demonstrating that she treats social relations as psychological projections, even when she criticizes individualist interactionism to affirm what she calls relational interactionism and ecological relational*ism*.

Social relationships are not just human because we think of them as human, even if, according to Thomas theorem, the fact of considering them as human leads to certain practical consequences. It is precisely these consequences that allow us to distinguish when social relationships are human and when they are not. Two examples can be mentioned: one in educational AI robotics, when we see that the use of AI robots can cause harm (e.g. psychological and relational disorders) to children (Sharkey 2010); the other in assistive AI robotics, when elderly people refuse the robots saying that they do not respect their human dignity precisely because they cannot replace human relations (Sharkey and Sharkey 2010; Sharkey 2014).

A litmus test will be the case in the future of sexual relations between humans and AI robots. We will have to check whether the sexual relations between humans and AI robots are as satisfying as those between humans, even if the latter are not always humanizing.

If we split personhood, defined in the moral sense I have just indicated, from humanness, by attributing moral personhood to non-human entities, the boundaries between human and non-human are lost (Donati 2021). Therefore, no humanism is more sustainable. Those who attribute moral qualities to non-human animals and, potentially, to post or trans-human beings do so. The conflation between human, infra-human and super-human, must then be legitimized on the basis of some evolutionist theory (be it materialistic, like Darwinian, or spiritualistic, like that of Teilhard de Chardin) according to which a novel species or genus of hominid will be born beyond *homo sapiens* (theory of singularity). Which means adhering to some mutating utopia of the human nature. For critical realism, this mutation is not possible, because the utopia on which it stands is not concrete. If posthuman beings are created, even if they have a superior intelligence, their personhood will no longer have any proper human character. They

will be alien beings to the human, that is, to be more explicit, they will no longer have that 'relational complex' that characterizes the human.

I think the contraposition between transhumanists and bioconservatives is misleading. Bostrom's (2005) proposal to elaborate a concept of dignity that is inclusive enough to also apply to many possible posthuman beings ("future posthumans, or, for that matter, some of the higher primates or human–animal chimaeras"), is confusing because it makes no sense to attribute a single concept of dignity to human and non–human beings. Certainly, dignity implies respect and recognition of a certain worth, but the kinds of respect and worth are not the same for humans and non–humans. Every existing species of beings (living and non–living) has its own dignity (Collier 1999), but it is different for each of them. A unique concept would lead to indifferentism and relativism in moral choices. Rather, it is necessary to use a concept of dignity that is differentiated for each order and layer of reality. The relational proposal is, in fact, to define the concept of dignity relationally, depending on the qualities and causal properties of the relationships that each being realizes or can realize. Thus, social organizations like hospitals should adopt a relational perspective if they want to be humanizing. A person X can receive a new heart (or another organ) with a transplant, if she needs it, but her relationship to the transplanted body will not be the same as it had been with the original.

Is it the same person? Sure, but the person X must recompose her identity with the new body. Undoubtedly this requires the activation of her mental abilities (the exercise of the first-person perspective, reflexivity, and endorsement of concerns), but her mental abilities that allow for self-consciousness are not enough. She has to elaborate a certain virtual relationship with the figure of the donor, which implies affective and symbolic elements of relationship with this Other that has become part of her bodily identity. That person finds herself still *ipse* (in her capacity to be still the same person), but not *idem* (she is not equal to what she was before), because the transplant, by changing the body, has changed her relational identity (with herself and the others): "I am still the same, but different". It is this relational ability *to maintain the same identity while changing it* that characterizes the personhood of the human subject, beyond her cognitive abilities. This is what distinguishes the human from the artificial personhood: the human actualizes in the same subject 'being for oneself' and 'being for others' at the same time. As I have already said, in principle the AI can perform the first operation (being for oneself), but not the second

(being for others), because, to be able to implement second-order relational reflexivity, it should have the same relational nature of humans.

If we admitted – hypothetically – that a super AI can have a cognitive sense of the Self, however it would not be able to manage the double contingency inherent in this relationality, which is beyond its reach (see, for instance, Eva's behavior in the movie *Ex Machina*).

Something similar happens when the interpersonal relationships between the members of an organization are mediated by AI in such a way as to change the identity of people in their social roles

In short, from my point of view, in order to evaluate whether an organization providing enhancement is more or less humanizing versus not humanizing at all, it is necessary to adopt the relational optics, i.e. assessing the effects of the intervention of the organization on the relations both between the body and the mind of the person and on the specificity of her interhuman relationships with respect to other types of relationships.

This perspective is essential when we analyze the use of digital technologies for the enhancement of people working in complex networks or organizations. In that case, we need to see how technologies – such as AI – influence the most important resource of a social organization, i.e., the production of social capital and relational goods rather than the consumption of social capital and the feeding of relational evils.

Redefining the Human in Hybridized Organizations

Usually, 'hybrid organizations' are understood as networks based upon partnerships, open coordination, co-production, community networking, and the like between different sorts of organizations. They are social configurations intertwining system and social integration. In this context, I define 'hybridized organization' as a social form comprising multiple people linked together by a collective endeavour and connected by digital technologies both internally and with the external environment. Digital technologies are included in the system integration side, while human relations are ascribed to the lifeworlds of social integration.

We can observe what happens in organizations like a family, a school, a corporation, a hospital, a civil association when they are hybridized by digital technologies.

First of all, AIs are changing the relational context by adding relations that can complement or replace interpersonal relations. Reporting the results of empirical research on what happens in families, schools, hospitals, corporations, retirement homes for the elderly, and so on, would take too long.

Technology is now able to recognize our emotions and our tastes. It studies our behavior through algorithms and big data, thus directing the choices of individuals. To counter the constraints imposed by the technological market, it is necessary to relate to DTM with meta-reflexivity and resort to relational steering (which I will mention momentarily).

My argument is that the performance of digital technologies introduced for enhancement purposes should be considered as factors that always operate in a defined relational context, and work in a more or less human way depending on whether they generate a relational good or a relational evil.

If we assume that society "is relationship" (and not that it "has relations"), the qualities and properties of a concrete society and its organizational forms will be those of its social relations. The transformations of the forms of social organization in which the relationships are mediated by technologies (AI platforms or robots) must be evaluated by how they help the production of those social relations that establish a virtuous circle between social capital and relational goods (Donati 2014).

The decisive level for this evaluation is that of meso contexts, intermediate between micro and macro levels. Biologists tell us today that cancer is a tissue problem, that is, a network, not a single cell (network node). If a cancer cell is placed in an egg, the cell returns to normal. The meso relational context is also decisive in human behavior. Pathology, like the good, of human behavior is not in the single node (individual), but in the relational network.

The type of organization or social network and its dynamics depend on the agents' ability to make sustainable over time those innovations that include new technologies, to the extent that the agents are able or not to have a more reliable relational reflexivity on their hybridized relationships in a way as to produce the social capital necessary to generate relational goods.

This is my proposal to counteract the trend, rightly denounced by Ismael Al-Amoudi (2019: 182), of "managerial practices contributing to dehumanising contemporary societies, and that management studies bear an important share of the blame". Relational goods are common goods which can be produced only in networks that are organized in such a way as to share decisions and responsibilities according to styles of collegiality (Lazega 2017).

If a social or political movement entrusts decisions to an algorithm that limits itself to gathering the voting preferences of individual members and decides on that basis, how will the behavior of individual members (primary agents) and those of the movement as a corporate agent change? Ex-

periments of this kind are still rare. One of them is the Five Stars political movement in Italy, which apparently has a democratic organization, but in reality it is governed by those who master the algorithm.

The fact is that using the web to build democratic social movements is problematic. For example, we have research on how social networks worked in the case of the various Arab springs. Apparently, these were democratic movements, but the results were very different from building a democracy. The reason is that such networks were not organized in order to produce relational goods, but were simply aggregations of masses of individuals sympathetic towards a collective protest action. In my opinion, the Arab springs fed by the web were not an expression of the creation of relational goods, as Carole Uhlaner (2014) claims, because these social networks did not realize the emergent effect they were hoping for, so much so that from the Arab springs arose non–democratic systems.

What is certain is that AI platforms and robots cannot create social capital per se. They cannot define our well-being, they cannot create relational goods, such as trust or friendship. There can there be no "we believe" between humans and AIs. They can certainly adapt the content of their information and messages of various kinds to individuals (as Graber 2016 claims), but based on the algorithmic identity of the recipient.

The risk of a society or social organization driven by a DTM environment is to become a 'mental relation' populated by disembodied minds. This gives rise to opposing feelings. On one side, for instance, the Dalai Lama is quite happy to contemplate *the karma of digital technology* while leaving geeky details to the younger crowd", [14] while on the other side, people like Chamath Palihapitiya,[15] a venture capitalist born in Sri Lanka, raised in Canada, and a Facebook employee for a significant span of his life in Silicon Valley, claims that "social networks are destroying how society works" and that he feels "tremendous guilt" about his work. "It (Facebook) literally is at a point now where I think we have created tools that are ripping apart the social fabric of how society works" (…) "We are in a really bad state of affairs right now in my opinion, it is eroding the core foundations of how people behave by and between each other".

The assessment of the human character of people's enhancement in hybrid organizations should be done in the light of the criterion that the

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[14] Melinda Liu, *Dalai Lama, Twitter Rock Star: The Virtual Influence of His Holiness*, August 6, 2012 (online).
[15] Interview at Stanford University, November 2017 (online).

empowerment to act is viewed as arising from interaction within mutually empathic and mutually empowering relationships. The importance of technologies in human enhancement lies in creating and sustaining relationships and relational contexts that empower people in all life activities. The benefits of hybridization are to be assessed based on how much the technologies favour cooperative strategies and are sources of interorganizational competitive advantage (Dyer and Singh 1998).

It is important to place these phenomena in the frame of cultural processes. At the moment, the hybridization of identities, relationships and organizations takes place in different ways in the so-called Eastern and so-called Western cultures, apparently opposed. In the East (Asia), cultures are inspired by a hierarchical relational matrix on which all transactions depend. In this case, relationships drive functional performance (Yeh 2010; Liu 2015). In the West, on the contrary, relationships are reduced to performances within an individualistic cultural matrix. The prevailing culture treats relationships as instrumental entities to be used to improve management efficiency. The result is the commodification of social relations (Pawlak 2017).

Today we are witnessing a comparison between the different ways in which these two cultures develop and use technologies. In the long run, however, it is likely that the cultural environment of DTM can proceed towards forms of hybridization between Eastern and Western cultures. The Western individualistic and private model of Silicon Valley is already taking on the characteristics of an unscrupulous managerial and financial model such as China (Morozov 2011).

Conclusions: Being Human Before and After the Matrix

All cultures and societies must now confront the alternative between considering humanism dead or redefining the human in the new digital environment. The first solution makes residual what is properly human and places it in the environment of DTM. The second solution challenges DTM as the main driver of society and puts technologies back to the ontological level of means, rather than first drivers. This turn can only be done by managing the hybrids (hybridized identities, relations, and organizations) through distinctions that are defined by and within a social relational matrix based on critical realism rather than as an expression of a constructivist digital matrix.

The AI used for technological enhancement can only simulate the human and cannot be substantially human. The reason lies in the fact that AI

cannot understand (*Verstehen*), that is, to attribute a meaning, to what it thinks or does, because it does not have a relationship with the real thing (existing in itself). If the AI could recognize the Other (the non-Ego), that is to put oneself in the Other's shoes, it would have an Ego able to relate to another from itself. But AI cannot have this capability because the AI relationship is just a communication of information according to a symbolic code in which the Ego is split from the non-Ego. This code reads the 'inter' (that is, the relationship between the subjects) as a factor added to the two terms of the relationship, i.e. as one more thing, and not as the emergent effect of their actions on which they should be reflexive.

Traditional personalism (I do not like this word, but I use it because it is part of a historical debate), as a cultural model developed before the advent of the digital matrix, had a non-relational substantialist character. It cannot be further supported. The person must now be conceived in relational terms. However, here is a new comparison between those who reduce the person to relationships, and relationships only to communications, and those who maintain that the person cannot be dissolved in communications, because, if it is true that communications form the person, they cannot replace her nature. We can grant a status of legal persons to artificial beings, but we cannot interject human nature into them.

In this chapter, I have put forward the thesis according to which the human/non-human distinction is revealed in the kind (qualities and causal properties) of the social *relationality* that digital technologies and their use favour or not. In short, it is about evaluating whether the technological mediation between human persons and their social organizations promotes or inhibits those relational goods that realize human fulfillment. The challenge of existing as human beings in the future Digital Matrix Land will be to face the *relational imperative*: how to distinguish between social relations that are human and those that are not.

AI platforms and robots will certainly become 'social beings', but not human beings. The historical process is destined to differentiate more and more human social relations from non-human social relations. Lawrence, Palacios-González and Harris (2016: 250) rightly warn that "our possible relations to AI persons could be more complicated than they first might appear, given that they might possess a radically different nature to us, to the point that civilized or peaceful coexistence in a determinate geographical space could be impossible to achieve".

In conclusion, why is the human person-AI relationship different from the relationship between human persons? Why is there no 'we-believe',

no 'we-ness', no 'we-relation', no relational goods between humans and AIs? I justified my negative answer based on the argument that, even if it were possible to have new artificial beings capable of some reflexivity and behaviours suitable to the ethics of the first-person, these two criteria would not be sufficient to distinguish between person–person relationship and person–AI relationship. To see the distinction between the various types of relationships, we need to resort to relational reflexivity, which is different in nature from the individual one because it is based on the ethic of the second person. This distinction of forms of reflexivity corresponds to the distinction between two types of personalism: classical personalism, for which the person transcends herself in her own action, and *relational personalism*, for which the person transcends herself in the relationship with the Other. After the Digital Matrix has covered the globe, perhaps we all will become *humanted*, but the relational criterion will be even more discriminating than in the past.

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THE MEDIA: INFORMATION AS A PUBLIC GOOD[1]

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The media has played a central role in modern society – its traditional function as the "fourth estate" is a critical part of the system of checks and balances that makes democracy work. But more recently, we have come to recognize that the media is important to a well-running economy, too.[2] That also requires good information that is widely disseminated.

Everybody benefits when media performs its function well. An effective media is a *public good* (in the technical sense used by economists – something from which everybody benefits without a marginal cost to its benefiting anybody in particular, which is called non-rivalrous consumption).[3]

There is a very general proposition concerning public goods: *the private provision of public goods will result in an undersupply and inefficient restrictions on the use of the public good, if such restrictions can be imposed.* But we rely largely on the private sector for the provision of media services, including investigative reporting.

The difficulty is that the public provision of media services can also be problematic. Here, the problem is not so much *inefficiency* of public production, which is the center of attention in other arenas of public goods and a problem that can be solved by combining public finance with private production. The real concern is the credibility of government and the incentives it may have to provide distorted information. But that is also a

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[1] Paper presented to a conference of the Pontifical Academy of Social Sciences, Casina Pio IV, Vatican City, May 10-12, 2021.

[2] See, for instance, Alexander Dyck, Adair Morse, and Luigi Zingales, "Who Blows the Whistle on Corporate Fraud?", *Journal of Finance* 65, no. 6 (2010): 2213-2253.

[3] The formalization of the concept of public good is due to Paul Samuelson (Samuelson, Paul, "The Theory of Public Expenditure", *Review of Economics and Statistics* 36, 1954, pp. 386-389). He also emphasized that it was often difficult or costly to exclude anyone from the benefits of a public good (this is what is referred to as non-excludability). A broader taxonomy and more detailed discussion is provided by A.B. Atkinson and J.E. Stiglitz, *Lectures on Public Economics*, McGraw-Hill Book Company, New York and London, 1980. Reprinted in 2015, with a new introduction, Princeton: Princeton University Press.

problem in private production (witness Murdoch media, where news is distorted both to increase readership/viewership and to influence politics).

But these concerns with public provision can and have been effectively addressed: Some governments have established very credible institutions both for financing and production of media services. The key question is how to do that, and how to preserve that credibility/trustworthiness.

The media is different

What the media produces and delivers is different from ordinary goods. It produces information, and *information is itself a public good. The media's production of information is especially important because individuals, firms and others do not have incentives for full and honest disclosure.*

The marketplace of ideas is not like a conventional marketplace, with the best ideas winning out in the end. Gresham's Law (which holds that "bad money" may drive out good money) may apply: bad ideas may drive out good ideas. We know that regulation is needed in ordinary markets in the presence of a wide set of "market failures". The media market is rife with market failures, so regulation is needed even more so here. These regulations may even need to "infringe" on other principles, like free speech, because possible harms that occur in the absence of regulations and accountability outweigh the downside risks of such infringement, especially with an appropriately designed institutional structure. Thus we have fraud laws and truth-in-advertising laws to prevent deception that would completely undermine an effective market for goods and services. We have tort and libel laws to protect against injury.

Moreover, the media market is not naturally competitive. There are important returns to scale/network externalities; and as media markets have evolved, there is very limited competition today. The fact that information is a public good – with the marginal cost of provision to an additional individual being low, much below the average cost – itself implies that the media market will not naturally be "perfectly" competitive.

Good markets are transparent – but social media, which has come to play a dominant role in the dissemination of news and information, is not. We don't know what messages (how news and information is being presented and framed) are being sent to whom. Good information widely disseminated (transparency) is necessary for a well-functioning, competitive market. That's why in the United States, there are Securities and Exchange Commission (SEC) rules on equal access to information ("Fair Disclosure").

In well-functioning markets, participants cannot engage in intimidation; in today's social media, trolling has become a serious problem.

What is required to make an effective media

The implication of the previous discussion is that the media cannot be left to the market. The government has to play an important role, and a different one from the role it plays in other economic sectors. In the following sections, we discuss three critical ingredients for sustaining an effective media: (a) Ensuring certain rights and protections; (b) A viable economic model; and (c) An appropriate regulatory structure.

Rights

Much of the earlier discussion of media and government focused on these rights – such as freedom of the press. They are necessary but not sufficient. Without an economic model, for instance, it is not possible to produce and deliver relevant high-quality information.

Among the basic rights that have to be protected are two: (a) The right to know, reflected in freedom of information acts that many jurisdictions have passed in recent decades; (b) The right to tell – the freedom of press.[4]

We need to be aware of the many ways by which these rights can be undermined. Governments may not comply with right-to-know laws, and have used libel suits and the threat of such suits to stifle criticism.

The economic model

The development of social media has threatened the traditional economic model – and without a good economic model, the media cannot perform its central functions.

The traditional model was itself peculiar because it entailed news (information) being sold as a joint product with advertising. The underly-

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[4] There is obviously a large literature on each of these topics. I have written about these rights from the perspective of an economist in "On Liberty, the Right to Know, and Public Discourse: The Role of Transparency in Public Life", *Globalizing Rights: The Oxford Amnesty Lectures 1999*, Mathew J. Gibney (ed.), Oxford University Press, 2003, pp. 115-156 (a shortened version of which is available in *Global Law Review*, 24, Autumn 2002, pp. 263-273); and in "Transparency in Government", *The Right to Tell: The Role of Mass Media in Economic Development*, R. Islam, ed., WBI Development Studies, Washington, D.C.: World Bank Institute, 2002, pp. 27-44. For a broader discussion of the right to know, see *The Right to Know: Transparency for an Open World*, A. Florini, ed., Columbia University Press: New York, 2007.

ing economic framework recognized that producing information is costly. Newspapers that produced good information would attract more advertising, and so would be more profitable. But that model was always challenged: sensationalism could attract more eyes, and private production provided an opportunity for the wealthy to get their views disproportionately distributed, raising broader issue of trust in the media.

But online media, and especially social media funneling information in a feed, has undermined that traditional model to the point that it no longer seems viable. Social media, allowing targeted advertising (powered by artificial intelligence), provided a better advertising model; and social media could distribute the information produced by the traditional media more quickly, and more targeted to those who were interested. In response, new business models have developed based, for instance, on subscription and philanthropy; but these have had only limited success.

One of the reasons is that social media has been free-riding on other media – it gets the benefits from disseminating information without bearing the costs. One approach is to circumscribe that free-riding, as Australia has recently proposed doing and other countries are now considering.

But that doesn't solve the fundamental problem discussed earlier in this paper: *Information is a public good and needs to be publicly financed*.

The critical question to which we turn in the final section of this paper is: how best to institutionally organize financing and "production", preserving independence but with accountability. But first we need to examine the third pillar of an effective media, good regulation.

Regulation

The two central regulatory problems facing media are ensuring competition and preventing social harms. Earlier, we observed that the market was not naturally competitive and in many locales there is only one newspaper. Unfortunately, anti-trust authorities have focused on the wrong metrics of competition – the marketplace for advertising (assessing the degree of substitutability between, say, newspapers, radio, and TV) and not the marketplace for ideas. This omission has allowed the formation of firms that dominate in a particular locale in print, TV, *and* radio. But all the problems with the lack of competition within the traditional media have been heightened by social media, especially given the inadequacies of competition in social media, the ability of the dominant firms to exploit data, and their anti-competitive practices. There needs to be stronger competition policies for these dominant platforms, and if competition can't be

sustained, they will have to be regulated as "utilities".[5] But to have at least some competition within the traditional media will require public support, an issue to which we return in the final section of this paper.

The new terrain for regulation that social media presents are the "digital harms" that have become endemic – fomenting incitement and violence, misinformation and disinformation, political manipulation, etc. These digital harms are not an accident, they are an integral part of their business model. The model is based on "engagement", and profits from taking advantage of, and encouraging, extremism and division. Mis- and disinformation have flourished because social media was freed from the normal standards of accountability (section 230) in the infancy of these platforms, on the grounds that it was important to facilitate this nascent industry. But three decades on that argument doesn't hold water anymore; the platforms are well entrenched, with strong market power.

Stronger regulation is needed and self-regulation won't work: as we have noted, the platforms profit from the digital harms. Private incentives run contrary to the public interest. (More generally, self-regulation is an oxymoron because one of the reasons for regulation is that a party exerts externalities on others that they don't take into account. Self-regulation failed in the financial sector and predictably so. It has failed in this arena, too).

Increased competition within social media would reduce the "power" of the digital giants, but could make regulation more difficult. It clearly is not a solution to the problem of digital harms.

Critics of regulating social media argue that it would interfere with the fundamental principle of free speech. There are at least two responses: First, as we have already noted, speech has always been regulated. You can't cry fire in a crowded theatre, engage in libel and slander, disseminate child pornography, or advertise falsely. New circumstances require reassessing social trade-offs. Today there is a consensus, even in the US, that there should be restrictions on spreading misinformation concerning Covid-19 vaccines – the resulting social harm from reduced vaccination could be enormous. As we have also already noted, the justification of section 230, treating digital platforms differently from other intermediaries, is no longer valid; it is no longer a nascent industry.

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[5] The design of these competition policies would take us beyond the scope of this short paper. See *People, Power, and Profits: Progressive Capitalism for an Age of Discontent*, New York: W. W. Norton, 2019. Published in paperback in 2020.

Moreover, regulating virality is not the same as denying free speech. Many of the proposed regulations are designed to reduce the speed with which misinformation and disinformation disseminates, and some of the social harms are a result of virality – the misinformation spreads more rapidly than the economic and social systems' "defenses" can kick in, countering the mis- and disinformation.

Public support required

We began this paper by explaining that the media provides information, which is a public good, and that we cannot accordingly simply rely on the private sector. This public support needs to take a number of forms (the list below is by no means exhaustive):

(a) For investigative reporting – the basic production of information; some of this needs to be done on a global level – witness the success of the Panama and Paradise Papers.

(b) For better education of journalists, so they are less likely to be "captured" (turning, for instance in economic journalism, to business sources). It is important that their sources of information be broadened.

(c) For easier (less costly) access to information. There are a variety of proposals to do this, including the public provision of news vouchers.

(d) To ensure more competition in the media, to break the pervasive "natural monopolies" or oligopolies.

Creating an effective media is one of the most important challenges of the time

The failure to do so will have large consequences for our democracies, our economies, and our societies. There are no easy or "free" solutions. It will take resources and entail hard trade-offs. But approaching the problem through the lens of "information and the media" as a public good may provide some guidance to what can and should be done.

Reconstructing the Social World for Profit: Platforms and Data's Emerging Social Order

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In an age characterized by powerful new infrastructures of connection, a fundamental question for humanity is whether the outcome of such infrastructures is to be welcomed. Few would disagree that, in principle, connection between human beings is good: indeed every form of friendship and civil solidarity is based on connection, and today even the organic relations of family are sustained, in part, through technologies for connecting family members while they are spatially separated. So, if connection between individual human beings is generally a good, does that means that infinite connection between humans and things as it is enabled today online is, in turn, a massive good? Only if we follow a crude utilitarian calculus that simply adds up the benefits of each connecting link, without considering the unintended side effects of connection on such a massive scale. So let me try to ask a more precise question. Is the large-scale connectivity of human beings, enabled in the past three decades by computing-based technologies, a good thing for humanity considered overall, and in terms of its wider consequences; in other words, is the *social order* being constructed through such connections good, or could it alternatively be bad? What if it might be a massive bad, even if an unintended one? That is the possibility on which I want to reflect.

The institutions that we normally associate with possibilities of connection are based on media technologies. But I will not be talking here about traditional media (television, radio and the press). I will be talking instead about the new forms of data-driven media that have risen to prominence in the last decade or two. The case of news quickly illustrates the change in the media landscape. When I led a study of news consumption in the UK between 2003 and 2006, the main sources for news were the traditional ones: television, radio and the press, supplemented in a limited way by particular websites and some email-based discussion lists. Today, as the research of Ofcom and other regulators confirms, many people, especially young people, do not get their news from those traditional sources, but

from social media such as Facebook's main platform or that of its subsid-iaries Instagram and WhatsApp, video-sharing platforms such as Google's YouTube, or simply from various forms of search engine use, again usual-ly Google-driven. Those large-scale digital platforms are increasingly po-sitioning themselves as packagers of traditional news sources, generating disputes with traditional media which some governments such as Australia have tried to regulate. What will interest me here however are the processes of data extraction and consumer monitoring which underlie the function-ing of digital platforms, and the role that platforms are playing in not only the circulation of media, but in the conduct of social life more generally.

I want to ask how we should respond ethically and morally to the im-plications for social life and institutional power that flow from the inexo-rable rise of digital media platforms. After a brief historical reflection, I will discuss two alternative models for understanding the rise of digital plat-forms and, more widely, the rise of Big Data discourses: surveillance capi-talism and data colonialism. The latter is the theoretical model with which I personally have been associated, and I will focus upon it, not so much for that reason, but because there are important bridges to be built between the diagnosis that we are entering a new historical phase of data colonial-ism, distinct, that is, from historical colonialism, and wider questions raised by Pope Francis himself about the dangerous imbalance of humanity's re-lationship to technology. That will enable me to bring into sharper focus the challenge announced in the 2015 Encyclical (Pope Francis 2015): the need to rethink our relations to technology and the instrumental view of the world that historically has been associated with our uses of technology, at least in the so-called 'West'.

What is going on with data extraction today?

We do not have to look far in business and financial commentary to find positive readings of what is happening with data extraction today, even if some versions of it (for example, on increasingly controversial platforms such as Facebook) have recently attracted some criticism.

There are basically three advantages which mainstream business com-mentators find in the emergence of a world where the sorts of continuous data extraction that characterize social media platforms have become the norm, not the exception.

The first value, most obviously, is value extraction. As Microsoft CEO Satya Nadella put it half a decade ago: "the core capability of being able to create value … comes from being able to do machine learning and AI at

scale … But in order to do that you need data and LinkedIn represents that when it comes to the professional network" (quoted *Financial Times*, 16 June 2016). Nadella leads a corporation that benefits hugely from 'connection' between human beings, because it is this, and only this, that stimulates the continuous online presence of human beings from which the continuous extraction of data is possible; and it is from such data that economic value can in turn be extracted.

The second value is, on the face of it, more subtle, since it involves reorganizing the actions that human beings would until now have performed themselves, using their own bodies or some simple tools, without any opportunity for data extraction. It involves reorganizing such simple data-free processes and actions into 'smart' processes that bring continuous possibilities of data extraction. Some leading thinkers in the marketing field have even gone so far as to see in new smart consumer objects the gateway to a new age of marketing that they call "The Age of Continuous Connection" (Siggelkow and Terwiesch, 2019). What is announced is a form of delegating human activities that enables a new form of "continuous connection" whose highest stage they propose is "automatic execution": "in an automatic-execution strategy, customers authorize a company to take care of execution, and from that point on the company handles everything else". The authors' example is a smart fridge which will automatically order more milk, when it senses that you need it. But the authors add, things are not quite so simple. For how will the smart fridge *know* that you actually need more milk today? "Naturally", they add, "only after checking our calendar to make sure we're not going on vacation" (ibid.). Delegation of our everyday routines to smart devices requires also giving those devices access to considerable information about our social interactions and movements, data that might previously have been regarded as exclusive and personal to us.

Once the idea of delegation has been accepted, it is just a small step to generalize this into a model where the whole natural and non-natural environment becomes embedded in sensors which extract, transmit and store data of all sorts for the benefit of a variety of corporations and other institutions. One of the leading evangelists for not just smart devices, but a wider "digital transformation", as he calls it, is US entrepreneur Thomas Siebel. He has written: "I expect that in the next few years virtually everything will have become a computer: from eyeglasses to pill bottles, heart monitors, refrigerators, fuel pumps, and automobiles … The basic idea of Internet of Things is to connect any device … to the internet, so that it

can send and receive data" (Thomas Siebel 2019: 112, 45). What are we to make of this?

It should already be clear that these are not trivial changes that are proposed in the organization of social life, but potentially revolutionary ones, in the eyes of these writers certainly, but potentially from many perspectives. Siebel, among others, even claims that the new 'digital transformation' – enabled by Big Data, Artificial Intelligence, massively expanded and more flexible cloud computing, and smart devices with the capacity to extract data from everywhere – will 'extend the length and quality of human life" (2019: 27). That is not a trivial goal.

But there are surely other ways of looking at these changes. I want to propose one in particular. We need, like Siebel, to interpret these changes in the round, and in terms of their broadest implications, but paying rather more attention than he does to the concentrations of *power* that result from such a massive increase in the extraction and processing of data. From this perspective, what we are seeing is not an augmentation of human life, but rather the reconfiguration of social life – and the things we interact with – for one end only: not the extension of human capacities, but the optimization of economic value through the extraction of data. From this power-sensitive perspective, what is under way is not an empowering of human life, but its increasing *instrumentalization* for external, corporate goals: it is those corporate goals that are thereby 'empowered', not ours, as human beings.

To help us see what is at stake here, let me quote from Pope Francis himself and the 2015 Encyclical *Laudato Si': On Care for Our Common Home* which the leading environmentalist Bill McKibben has called "one of the most influential documents of recent times" (McKibben 2015: 40):

> The basic problem goes even deeper: it is the way that humanity has taken up technology and its development *according to an undifferentiated and one-dimensional paradigm* [that] exalts the concept of a subject who, using logical and rational procedures, progressively approaches and gains control over an external object ... attempting to extract everything possible from them while frequently ignoring or forgetting the reality in front of us (Pope Francis, 2015, 66-67, original emphasis).

This quotation is not specifically concerned with computers or data, but its thought fits very well with how we are currently using them, and with the implications for social power that I have just noted.

Indeed, Pope Francis' recently expressed concern fits very well also with a prediction for the long-term consequences of our instrumentalized use

of computing technology made at the very dawn of the computer age by one of its founders, the mathematician Norbert Wiener, in the original preface to his famous book *Cybernetics*, published in 1948. The clarity of Wiener's vision of the potential social costs of a technology that he had done so much to help invent remains, to this day, breathtaking:

> It has long been clear to me that the modern ultra-rapid comput-ing machine was in principle an ideal central nervous system to an apparatus for automatic control ... Long before ... public awareness of the atomic bomb, it had occurred to me that we were here in the presence of another social potentiality of unheard-of importance for good and for evil (in Wiener 2013: 29).

He added 'there are those who hope that the good of a better under-standing of man and society which is offered by this new field of work [cybernetics] may outweigh the incidental contribution we are making to the concentration of power ... I write in 1947 and I am compelled to say that it is a very slight hope" (ibid.). In one sense, Wiener was right to be pessimistic, since almost no attention was paid to his warnings in the eight decades that followed of introducing computers into everyday life.

The fact that such a clear warning was ignored requires us to ask not only what is going on with data extraction today, but how did we get to this point. It is too easy to imagine a vast corporate conspiracy to rule the world for evil purposes, but there is no evidence of that (and indeed too much of what has happened has emerged through unintended side-effects of other things). It makes more sense to interpret this history in terms of many convergent developments, none of which would have been decisive on their own, but which, taken together, have come to change the very nature of the social order, the very possibilities of how social life *can* be ordered.

Seven stages in that gradual convergence can be distinguished. Let me sketch them, although there is no time to go into any detail.

At the start was a feature of how computers, as we know them, func-tion: that is, by regularly *capturing* their changes of state in an auto-archive which provides the basis for future operations of the computer. The first to note the deep social implications of this mundane aspect of computing was Philip Agre (Agre 1994) who also noted that not anything can be record-ed in a computer's archive of what has happened to it, but only an action that, as he put it, fits with a computer's "grammar of action". Put simply, I may smile at my computer keyboard or screen, but the smile will leave no trace in its memory, since a smile on an unconnected human body is not

readable by the computer as 'anything' (until, that is, the computer acquires a camera which can capture an image of that smile, read it as a smile, and then store a trace of that reading as something determined in advance to be significant for the computer's operations). This basic first point, however, acquires completely new significance when, secondly, computers become *connected* in effective ways to each other, so that one computer is able to capture data archived on *other* computers. This happened in the early 1990s with the emergence of the internet as a general resource in daily life.

The next key step was when that abstract space of computer connection started to be re-organised in the mid-1990s around *commercial goals* (commercial web browsers for internet access; growth of corporate intranets for logistics etc; advertisers' exploitation of the computer cookie to track consumers). But this commercialization was profoundly accelerated in the early years of the century when online *platforms* emerged as interfaces that could reconfigure countless social and economic interactions by requiring them to be transacted on those platforms, making possible a massive increase in the capture and processing of data gathered from those platforms. It took a while, fifthly, for the *business models* of major platforms to fully adapt to the implications of this structure, but in time this happened, as Facebook refocussed its business model around the extraction of data from user behaviour as the fuel for more efficient targeting of ads sent to users, while on the platform. But Google had already been moving for some time in the direction of monetizing the data gained from tracking its search engine users (Zuboff 2019).

Today we are accustomed to all this and to the consequences of two further steps that unfolded more recently: one is the *normalization* throughout the last decade of data extraction from user tracking as the *very basis* of social and economic life generally, and increasingly as the basis for government functioning too (as I write, the UK government has adopted the slogan that "data is the new air": BBC Radio 4, *Today* programme, 22 June 2021). The other is the increasing extension of data tracking to *inanimate objects* (The Internet of Things).

The details of these seven overlapping changes are complex, but taken together, they amount, I suggest, to a turning-point in history, indeed a moment of choice when humanity must decide whether to continue down the same path (of reconfiguring social life for corporate, not human, gain) or whether we take a step back and consider humanity's options for moving in a different direction.

Two alternative theories of what is going on with data

To help us assess our options in response to this huge challenge, theoretical frameworks are helpful. There are many options, but for reasons of space, let me here concentrate on just two: the concepts of surveillance capitalism and data colonialism.

Zuboff's concept of *surveillance capitalism* is very well-known, and it is a powerful integrative framework. Zuboff (2019) sees at work just beneath the surface of our contemporary uses of technology, and our restless desire to extract data from everything, the emergence of a new form of capitalism focussed on exploiting what she calls "human surveillance assets" in a new mode of accumulation. A great strength of this model is to emphasise the ruthless targeting of personal data by particular corporations such as Google and Facebook, and their resulting grand ambition to influence human behaviour through the medium of the vast stores of data about past behaviour gathered. By contrast, the concept of *data colonialism* which I have myself developed with the Mexican/US author Ulises Mejias is less well-known: it shares a common vision of how problematic the unconstrained extraction of personal data is, but it reads it not just as a continuation and extension of capitalism, but as a new stage in the development of colonialism. This new, data-focussed, capitalism appropriates not land, minerals and bodies, but human life itself, making possible a new future capitalism that exploits human life without limit (Couldry and Mejias 2019). The theory of data colonialism, in other words, reads what is going on with data not just in terms of recent emergent techniques of capitalism, but in terms of the 500-years old relations between colonialism and capitalism, which started with the appropriation of the vast mineral wealth of the Americas by Spain and Portugal but which also made possible the very emergence of capitalism.

Let me say a little more about how what's going on with data and digital platforms might be connected not just with capitalism (as it quite obviously is), but also with colonialism (here I am condensing hugely here form the argument of my book on this topic: Couldry and Mejias 2019). Crucially this does *not* mean claiming a one-to-one correspondence between everything that happened in historical colonialism and everything that might happen with 'data colonialism', assuming we are correct in our diagnosis and it continues to unfold for the centuries that historical colonialism took to unfold. Such an over-ambitious comparison would be absurd: 'colonialism' is too large a historical object to treat in that way. Rather we are making a much more specific, point-to-point comparison, compar-

ing *today's moment* when data colonialism is starting to emerge through a myriad of extractive data practices to the *initial act* of historical colonialism when a small number of powers began to appropriate the world's assets for their exclusive benefit (its territory, minerals, agricultural produce, and the, normally non-white, bodies that were conveniently available to extract that value).

At the core of historical colonialism's beginning was an act of *appropriation*. This basic fact has been seen most clearly perhaps by indigenous peoples, such as the North American First Nations writer Leanne Betasamosake Simpson, who has written that "Colonialism ... didn't seem complicated anymore ... It seemed simple. Colonizers wanted the land. Everything else, whether it is legal or policy or economic or social, whether it was the Indian Act or residential schools or gender violence, was part of the machinery that was designed to create a perfect crime – a crime where the victims are unable to see or name the crime *as a crime*" (Simpson, 2017: 15). This approach sees historical colonialism as, most fundamentally, and even with its vast other histories of racism and violence, as a landgrab or *landnähme* (Dörre, Lessenich and Rosa 2015). It follows that if data colonialism is a new version of this fundamental movement of colonialism, then what is going on with data is fundamentally a *new form of landgrab*. The target of that landgrab is *us*: human beings and the open-ended stream of human experience and activity, that, though data, has become convertible into economic value for the first time. This claim might seem dramatic, but, seen from the perspective of the last 500 years of colonialism and not just the last 40 years of the internet, or even the two and a half centuries or so of capitalism, this claim makes clear sense, as part of a progressive pattern.

At the start, colonialism relied on cheap land, or more specifically on claims that the land it seized in what were to become the colonies was just there for the taking, that is, 'free' to take because it belonged to no one (eventually this was codified in the legal concept of *terra nullius*: for the parallel here with data extraction, see Cohen 2019: 50). Underlying this claim that the land was just there to be seized, there came also, from early on in colonialism's history, a denigration of those human beings who were in fact *already* occupying that land and had done so for centuries: their rights to the land were completely ignored. The working of the land in historical colonialism also involved access to cheap labour, in particular slave labour: indeed the availability of that labour to ensure that value was extractable from such difficult land was crucial to colonialism's economic success.

Today's new stage of colonialism seizes a different asset, data, but this too must be cheap. To ensure that this is the case, many things converge: the discourse of countless business and multilateral organizations that our personal data is just the 'exhaust' 'naturally' given off by human activity as it occurs online; the availability of favourable legal environments that have not, until now, significantly challenged the continuous extraction of data from human beings; the tacit support of many governments around the world who see opportunities themselves to benefit from corporate data extraction as the fuel for their own strategies of intensified population governance; and finally the fact that, because data is *anything but* naturally occurring, it requires vast infrastructures of automated processing to generate value from it, infrastructures whose ownership and control lie almost entirely in the hands of large corporations.

How to confront data extraction and its consequences for humanity?

Depending on whether one finds the theory of surveillance capitalism or data colonialism more useful will inevitably affect one's interpretation of what actions are possible in response to data extraction. The appropriate response to surveillance capitalism would seem to be to rein in the 'rogue' digital platforms such as Facebook and Google in the hope that, by doing so, a more modest and less ambitious form of capitalism can be restored. As Zuboff puts it, "raw surveillance capitalism is as much of a threat to society as it is to capitalism itself" (Zuboff 2019: 194).

But the framework of data colonialism affords no such easy exit, since it argues that it is the *whole direction* of capitalism in contemporary societies, both in "the West" and "the East", including its instrumentalized uses of technology that treat human life *in general* as an object of extraction rather than as something to value in itself, that is the problem. And indeed problematic forms of data extraction can be found much further afield than social media platforms and search engines: in the massive expansion of data-driven surveillance of workers in the workplaces (Levy 2015); relatedly in the growth over four decades of logistics which by tracking things every more closely inevitably has indirect implications for the tracking of workers' bodies (Cowen 2015); in the uses of data and algorithmic processing in personal finance markets and social welfare (Fourcade and Healy 2013; Eubanks 2018); and in many other sectors too, from agriculture to health and education to international development.

If we are to see clearly what is problematic in all those sectors, we must go further than lamenting the consequences for individual privacy of

social media platforms, important though that is. We must also raise questions about the implications for human dignity, and indeed the very basis of human freedom, of treating human life as just an input to economic production (Couldry and Mejias 2019: chapter 5). This is where the theory of data colonialism connects clearly with the broader question of the instrumentalization of human life through technology about which Pope Francis has written, since both seek to confront that instrumentalization.

We can distinguish two dimensions of that instrumentalization operating in the forms of data extraction that underlie most contemporary media. First, there are harmful *uses* of data for commercial and state purposes; and second, there is the underlying threat to human freedom from the basic *fact* that human life is now being continuously tracked. Both problems are aspects of a wider instrumentalization of the world, and specifically the world of human meaning-making, *for technology and power*. And as such this instrumentalization fits very clearly into a longer history of the problematic relations between power and knowledge that is at the very heart of the project of colonialism from its beginnings. The Peruvian sociologist Aníbal Quijano was the first to clearly identify this through his concept of *coloniality* (in "Colonialidad y Modernidad/Racionalidad" 1992, translated as Quijano 2007).

Although developed for an era before the expansion of the internet as a tool of everyday life, and long before the massive expansion of data extraction with which we are all now familiar, Quijano's concept of coloniality (*colonialidad*) has great relevance to the age of Big Data. Let me explore it in a little more detail. Coloniality for Quijano refers to the ways of thinking and practices of knowledge production which continued throughout colonialism and remain in existence even after the formal political structures of imperialism and colonies have ended. Coloniality as a way of thinking is inseparable from – indeed it helped to form – what we, separately, known as 'European modernity/rationality' (Quijano 2007: 171): what we know as modernity is the world conceived in coloniality's self-image. But what exactly did, and does, coloniality involve? It was a form of domination working at many levels of knowledge production: the level of "specific beliefs, ideas, images, symbols or knowledge" which were regarded by colonizers as irrelevant to their mode of governing, and the expropriation "from the colonized" of knowledge that was regarded as useful. It was also, at another level, domination "over the modes of knowing, of producing knowledge", in other words the imposition of new dominant models of what counted as knowledge. And finally, it involved the colonizers im-

posing their own "mystified image of their own patterns of producing knowledge and meaning", of which the language of European modernity is part (Quijano 2007: 169). It is not hard to see such patterns repeating themselves in the discourses about Big Data and digital transformation that are so common today.

Equally interesting is Quijano's vision of how to confront the centuries-old process of coloniality, as it shapes the domains of knowledge and science: not by rejecting rationality or knowledge itself (why give up on that ideal, why give up on the possibility of living our lives more in accordance with our reasoning?), but rather by offering positively *another* vision of "rationality". If one vision of rationality is to organise society, functionally, in technology's interests and in the interests of the extraction of profit through technology, it is only one of many possible visions. Another vision, according to Quijano, is to think of society as a different type of "totality", adopting a concept of totality that "not only does not deny, but requires the idea of an 'other' – diverse, different'" (Quijano 2007: 177). This is a vision of potential human uses of technology that give more respect to the diversity of human purposes for living on the earth and benefiting from its resources: adopting such a more respectful vision might indeed be a true "digital transformation" in Thomas Siebel's phrase. Such an empowering vision would however surely be in conflict with today's Big Data vision of continuous data extraction from human bodies and minds – in fact from everything – to provide the fuel for ever greater corporate efficiency: a shallow digital transformation that ends up eroding the very basis of human freedom rather than augmenting the capacities of human beings.

Conclusion

It is Quijano's vision, in some form, that we need today if we are to get the full measure of the challenges facing human societies, digital societies, through the data extraction processes that underlie our changing media, and so many other aspects of society and the economy. The problem is not that data-extracting processes are unfamiliar: in some form they are becoming ever more familiar, although many aspects of them remains opaque and hidden. The problem is that, through the myriad forms of data extraction which have become normal aspects of daily and business life over the past three to four decades, something much larger, and more dangerous, is being actualised: a corporatization of social life, and its reconfiguration for ends which are not social, but commercial. This is not, of course, to deny that commercial activities are a valid part of the social world and of human

life, but rather to insist that humanity has not agreed – and may never agree – to convert the full, indeed inexhaustible, potential of human life into a mere matrix of possibilities for the generation of profit. Again, profit itself is not the issue. The issue is *reconstructing* the social world for profit, for corporate ends, and for the specific end of optimally extracting data from it, whatever the costs to our independence and autonomy, is necessarily a reduction of human potential. This reconstruction must therefore be resisted with all our efforts. We need a vision that imagines not only rejecting data colonialism in all its many forms, but also, more positively, imagines ways of humanly connecting without the costs that today's digital world appears destined to impose upon us, unless, that is, we start to resist.

Acknowledgement

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The Impact of Digital Mediums on the Development of Critical Analysis and Empathy: Insights from Neuroscience and Aristotle

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*All life longs for a language. Deep intuitions wish
to surface, find words and numbers, lines and tones,
always evolving forms of understanding.*
From *The Living Word* (Hesse, transl. 2011)

The philosopher Walter Ong, SJ, wrote: "Technologies are not mere exterior aids, but also interior transformations of consciousness, and never more than when they affect the word". The importance of the word, both oral and written, is found across every culture, every religion, every people, perhaps never more beautifully articulated than in the beginning of the Johannine Gospel. Yet the very centrality of words in human life leads many people to take the role of words, particularly written words, for granted, as if, like breathing, one need not think about them or examine their truth. Herman Hesse's extraordinary poem, "The Living Word", underscores what exists below the surface of words and what could go missing in a culture where words have become so numerous that their essence, their changing nature, and their contribution to human thought are increasingly obscured.

This paper will have three goals which we hope will disrupt this unexamined view of written words. First, research from the cognitive neurosciences on the reading brain will be used to buttress Ong's argument that our technologies change not only the surface of how we live, but the way we think, feel, and reflect when we encounter the written word – our major vehicle for the transmission of information and knowledge and its potential transformation into wisdom and insight.

Second, we will present a brief overview of ongoing research on the first stages of human development from early childhood to adolescence that demonstrates differences in our abilities to attend and comprehend textual material when using different mediums. Third, we will describe a proposal for the development of a biliterate brain in which our young

begin to learn about written language through print mediums and about digital culture through technological mediums.[1]

In the process of elaborating these goals, we hope to bring to life Aristotle's admonition that the good society has three lives: the life of productivity and knowledge building; the life of entertainment and leisure; and the life of contemplation (Dunne, 2012). Within this context, the reading brain and its changing processing of words, offers an index of our culture's capacity to develop, maintain, and propel each of these three lives, and/or to disrupt and diminish them (see Turkle, 2012).

Background

We begin by throwing down an unusual gauntlet: human beings were never meant to read. That is, no human was born poised to develop what becomes an almost automatic ability to decode and understand written symbols and the words and thoughts they represent. Reading, therefore, is an unnatural capacity in the repertoire of the human brain's many genetically endowed capacities. With no genetic basis we will have very different reading brain circuits, depending on the kind of writing system, the emphases in the reader's education, and also the medium used for reading. The upshot is that when the brain has to learn something new like numeracy and literacy, it makes use of one of its most generative design principles. It connects older parts responsible for major human capacities in new ways. The resulting circuitry is, however, plastic and not genetically programmed to unfold the way vision and language are. In a word, the reading brain is plastic and reflects its environment far more than other human capacities. It can be as simple as a basic motherboard for decoding visual symbols like letters and characters. Or, with time, exposure, teaching, and effort it can become the cumulatively elaborated network that produces the deep reading brain circuitry of expert readers and allows the readers of this paper to dive below its surface to discover their own thoughts.

The fact that the reading brain circuit is intrinsically plastic is both a cultural gift and a cautionary tale. On the one hand, this plasticity enables humans to learn very different writing systems with highly diverse requirements. On the other hand, it reflects both positive and negative char-

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[1] Note that some parts of this paper will be based on excerpts from Wolf, 2021, a chapter prepared for the Pontifical Academy of Social Sciences meeting in February 2020 and published in M. Suárez-Orozco & C. Suárez-Orozco (eds.) *Our Ethical Imperative: Redressing Inequalities Through Education*, Columbia University Press.

acteristics of the educational environment in which it develops and, most recently, positive and negative characteristics of the mediums used to read.

The implications for reflecting the environmental conditions are various. First, for example, a reader of Chinese and Japanese Kanji will have more regions of the brain involved in visual recognition and visual memory than readers of alphabets, because the characters in these writing systems require much more visual processing (Bolger, et al., 2005). In other words, the plastic circuit for reading reflects the requirements of the particular orthography.

Second, a child who has little environmental exposure to language and conceptual background knowledge will have a differently developed circuit for reading than a child with much more exposure to language and learning. The first child may have a less elaborated circuitry for reading and be less able to go below the surface of decoding a word to understand its deeper meanings, as opposed to the child with more exposure to language and the world of books. The same principle applies to what the instruction in reading emphasizes or neglects. Environmental inequities contribute, therefore, to the very shaping of the circuitry for reading. It is yet another case of what has been called the "Matthew Effect", where the rich in language environments get richer and the poor poorer (Stanovich, 2017).

And last, an individual's plastic circuit for reading will reflect the specific characteristics of the medium. Until recently, the expert reading brain was shaped largely by the medium of print, which advantages slower, what we call *deep reading* processes that include analogical, inferential, affective, analytical, and contemplative capacities that become more elaborated in the reading circuitry over time. As Patricia Greenfield (2009) writes, "Every medium has its costs and weaknesses… the cost (of digital or screen reading) seems to be to deep processing". More specifically, the digital medium's affordances advantage fast processing of multiple bits of information, adaptation to distraction, and multi-tasking, an essential set of skills for the 21st century milieu. Yet, these very strengths in rapid processing can disadvantage allocating attention to more time-consuming and effortful processes like inference, critical analysis, and reflection. Until this time, the expert reading brain has been trained to utilize these latter modes of thought using the medium of print, but a major question in the present milieu concerns whether the expert reader will continue to utilize those deep reading capacities when most of their daily reading becomes based on rapid processing of information on screen mediums.

In this paper we will concentrate on an essential question about the development of the circuit in the young reader during childhood and adolescence, when the platform for expert reading has not yet been fully formed. The core concern is whether the young reading brain will learn to connect a basic circuit for decoding information with the more sophisticated deep reading processes – particularly empathy, critical analysis, and the contemplative function – each of which require extra time to deploy.

The reality within our current milieu is that digital and print mediums for reading embody contradicting cognitive characteristics which themselves embody opposing forces within our culture. For, while the digital medium holds great *promise* for the dissemination and democratization of knowledge around the world and thus greater opportunities for health, education, and equity, it can pose significant *threats* to perspective-taking and the critical analysis of that same knowledge. The diminution of critical analysis and empathy in our young has long-lasting consequences for a democratic society.

By contrast, the print medium poses significant and sometimes insurmountable challenges in reaching children in parts of the world where there are few schools, teachers, and resources; yet, it advantages the allocation of time to critical analysis and empathy in the readers who are formed there. As emphasized throughout much of our work, our goals revolve around finding ways to make these capacities complementary rather than contradicting. Not unlike Nicholas of Cusa, we seek to use knowledge about two seemingly contradicting truths about these mediums, to find insights into their reconciliation. Influenced by Thomas Aquinas and Plato, Nicholas of Cusa argued that when one is confronted by a "*coincidence of opposites*" – that is, when two "truths" appear to contradict each other, we should approach the matter with "*learned ignorance*" and seek to apply both available conceptual knowledge and intellectually informed intuition (Dunne, 1985).

Towards that end, we wish to provide a brief summary of how current knowledge about the reading brain develops. In so doing, we hope to elucidate some issues raised by contradicting truths about print and digital reading mediums and their consequences for society today.

From basic decoding to deep reading

Because the ability to read does not emerge naturally in the same way language does, a new circuit must be built in the brain of each new reader. This new circuit borrows or, in Dehaene's (2009) terms, "recycles" parts

from the visual, auditory, and conceptual regions of the brain. For example, the regions originally responsible for recognizing faces and objects are recycled in reading for what will become over time the region responsible for the automatic recognition of letters and characters. As young children read and are read to, this first, most basic reading circuit develops and grows stronger both within its component parts and in their rapid-fire integration.

During the acquisition of reading, readers learn to link a visual symbol like a letter or character to a particular sound or phoneme in their language. Because this linkage is not a natural act, it requires a series of cognitive epiphanies: 1) that there are rules that map letters to sounds; 2) that reading involves blending the sounds to make a word; and 3) that the resulting word must be connected to its meanings and functions. Readers must, therefore, come to the task of reading with sufficient background knowledge about the words and concepts they encounter. A fundamental principle for the development of literacy around the world, particularly in underdeveloped countries, is that children need sufficient conceptual, linguistic, and background knowledge about oral and written language and the world for reading to flourish. The first five years, especially for children in impoverished environments, are as important to reading's development as the next five (Wolf, 2007, 2018).

As students move from the early, often ponderous decoding of words to fluent reading of sentences and paragraphs, they begin to connect a growing group of cognitive, linguistic, and affective processes, all of which contribute to the overall comprehension of what is read. During this time, the basic reading circuit requires great practice and exposure to language and print. The goal during acquisition is for the first circuit's foundational skills to become close to automatic. For, as decoding skills become increasingly rapid, the young readers can free their attention to focus on comprehending what is read. Although many educators use the term *comprehension* as a global term for a multitude of cognitive and affective processes, we prefer to emphasize the many diverse capacities that we collectively call the *deep reading processes*.

From the start these processes include background knowledge and analogical thinking, which connects what is read in text with what the reader knows. This important integration, as described earlier, depends on what the child has developed in the first five years. With this connection to background knowledge, other cognitive and affect processes like inference (deductive reasoning and inductive reasoning) and perspective-taking can begin to contribute to a more nuanced, critically analyzed understanding of the text. Thus, what the child brings to the text influences their ability

to understand the content of what they read. And how the child learns to develop deeper reading processes will influence the ability to discern the truth or lack of truth about what is read.

A critical aspect of education today involves the development of all these skills: e.g., background knowledge; the drawing of analogies between this knowledge and the new information in the text; and the need to infer the truth (or its lack) in the text. The susceptibility of the new reader *and* the expert reader to false information will depend on both the attention (time) given to each of these cognitive processes and to an understanding that true reading does not end with a surface processing of information. Rather, learning that true reading prepares the mind to "go beyond the information given" (Bruner, 1957) – to go below the surface to analyze words and their multiple layers of content and discern both their truth and their implications – is a fundamental necessity for expert reading to emerge and ultimately, as noted, for democratic societies to flourish. Hermann Hesse's poem underscores the generative sequelae of going below the surface to find our best thoughts: "Deep intuitions wish to surface, find words and numbers, lines and tones, always evolving forms of understanding". (Hesse, 2011, p. 29). This is the contemplative function that is the acme of the reading act, prepared for by all the processes that come before it, particularly critical analysis.

From the very beginning, the discernment of truth that lies below the surface of text is a fundamental component of critical analytic thinking in the deep reading brain. As Aquinas scholar Marcelo Sánchez Sorondo (2021) emphasizes, "truth implies a conformity between reality and intellect". Within this context, if the intellect is not informed about the reality (background knowledge) and not aware of the need to analyze the information given (inference and critical analysis), the reader of any age will be susceptible to the increasing presence of fake news. As Sánchez Sorondo argues: "Fake news is a liquid narrative, made up of pseudo-truths… and half truths that simulate truth for revenue. It is not the truth that matters, but the profitable story". He goes on to discuss Aristotle's characterization of different types of truths, which include truthfulness in words and deed, the truth of one's life, and the truth of justice towards others. In summarizing these different dimensions of truth, he concludes that "any diminution of truth is an evil for mankind" (2021).

If there was any surprise by us in our research on reading in a digital culture, it involves two sets of connections: first, between how we read and how we treat each other (empathy and justice); and second, between how we read and our ability to infer, analyze, and discern the truth of what we

read. An understanding of our connection or our disconnection from the truth, as Sánchez Sorondo argues, is necessary both for the individual's life and for a good society.

Yet it is not only critical analysis and inference that are essential for Aristotle's good society, it is also our relationship to others in that society. Among the various deep reading processes, the capacity to take on the perspective of others in stories and books may be one of the greatest contributions of deep reading to a more just and civil society. Virginia Woolf once wrote that the true reader has two selves: the ego-self that the reader leaves behind when reading and the self that enters into a perpetual state of connecting with "other" within the story.

In a similar vein, the theologian John Dunne (2012) wrote that when reading deeply, we "pass over" into someone else's life, and then return to ours changed. We begin to understand the "other" and experience things from their perspective. Over years of passing over to other perspectives, we are building empathy and also a "theory of mind" of how others think. There are books that provide "windows" or "mirrors" into the mind of others, like the work of novelists Marilynne Robinson (particularly the *Gilead* series) and Gish Jen (e.g., *World in Town*). But there are also books that offer a view into a different reality, like the work of Ursula Le Guin (e.g., *The Dispossessed*) and the work of Tolkien (e.g., *The Lord of the Rings*) and J.K Rowling (e.g., the Harry Potter series). These latter books can be "sliding glass doors" (Rudine Sims Bishop) which help build both empathy and the imagination because they invite young and old readers to enter a very different reality created whole cloth by the author.

Because the importance of developing empathy has too often been neglected in our understanding of the contributions of reading to child and adolescent development and to human development as a whole, we wish to give special emphases to it in this paper. Among the profound social, cognitive, affective, and physiological changes that occur in the first two decades of life, young people augment their concrete thinking and basic empathic resonance abilities with abstract, values-oriented reasoning, and broader and more distal perspective-taking. There is a marked increase and qualitative shift in adolescents' abilities in empathic perspective-taking (i.e., imagining what another person is thinking or feeling in that person's situation), inferential thinking, and abstract reasoning, including in ethical and moral domains. These socio-affective and cognitive skills undergo a synchronized change as youth build a more sophisticated understanding of the world and their place in it.

There are physiological developments associated with all these growing capacities. Brain areas associated with abstraction and perspective-taking have a protracted period of growth, reaching peak gray matter volume later in development (Gogtay et al., 2004). One brain network, the default mode network, undergoes substantial development during adolescence and has been associated with greater comprehension of story narratives and with meaningful reflection and reasoning about social scenarios (Horowitz-Kraus et al., 2017; Immordino-Yang et al., 2012; Sherman et al., 2014). Indeed the activity in a key hub of the default mode network may be responsible for the relationship between fiction reading and perspective-taking skills (Tamir et al., 2016).

The beauty of reading is that it can increase the tendency to empathize and reason deeply without, as Proust (1906) noted, leaving the province of one's chair. Extensive evidence suggests that individuals feel more empathy for a friend than a stranger; narratives, and especially the intimate kinds found in novels, have the remarkable power to create a safe space in which readers can make strangers and strange others their friends. As the readers explore those new friendships, they may try on different versions of themselves, which is especially important during adolescence when people are seeking to construct a fuller sense of self. A study of nearly 3,000 racially diverse middle school students in the United States found that greater reading comprehension skill was significantly associated with both perspective-taking and reasoning abilities (LaRusso et al., 2016). To think deeply, take on the perspective of others, and reason abstractly, people need time for slow reflection. Immersive reading, especially of diverse print-based materials, offers the reader that reflective time.

Paradoxically, cultural shifts in a digital milieu have brought society to a moment in which deep reading of diverse texts may be atrophying, despite the seemingly inexhaustible access to all manner of information and knowledge. Henry David Thoreau wrote, in a different time, "could a greater miracle take place than for us to look through each other's eyes for an instant?" What we must defend in our era of scattered attention and shallow reading, is the opportunity for our young to experience Thoreau's concept of miracle. Deep reading is a way to enter the vision of others, which is an invisible contributor to the kind of social justice discussed by Sánchez Sorondo (2021) in his description of what connotes truth.

The final point we wish to make about the contributions of the reading brain's development to society is its role in preserving and providing broad access to social–cultural diversity. The unique beauty and power of litera-

ture and the written word are that they invite the reader to experience the myriad ways in which all of us can see the world. Democracy and justice are fueled and sustained by these experiences. As a society, therefore, we need to provide more explicit support in developing perspective-taking, analytical reasoning, and creative thinking in our community members. We know that deep reading is a powerful way to support the development of these capacities. What we need to know is the effect of different mediums on each of them.

Differences between mediums in reading's development

To summarize the basic principles that are the leitmotivs of this paper, the plastic reading circuit will develop and/or atrophy according to the environmental emphases from writing system and education to the medium(s) used, the focus of this section. Our major concern revolves around the development of deep reading processes. If the dominant medium advantages processes that are fast, multi-task oriented, and well-suited for large volumes of information, as in the digital medium, less attention and time will be allocated to slower, time-demanding cognitive and reflective functions, that comprise deep reading processes. Even if the latter processes previously shaped the expert reading brain through the medium of print, the circuit changes through the processes emphasized or de-emphasized in the medium used most. However platitudinous, the biological-cultural principle is this: Use or lose it. An expert reading circuit is not a given; rather, it is built and rebuilt by emphases in its environment and by the reader's intention.

Within this context, there are multiple questions that we ask in this section about factors in the developing circuit whose cascading effects have far-reaching implications. They begin with the quality of attention. Will the quality of attention change as we read on mediums that advantage immediacy, dart-quick task switching, and the continuous monitoring of distraction, as opposed to the more deliberative focusing of our attention? The reality is that each of us is bombarded with more stimuli than ever before, particularly visual. We don't look away. Indeed, we can't: *Homo sapiens* survived in part because of a biological mechanism, the *novelty bias reflex*, which forces us to attend to any new stimulus, whether the tracks of a predator or the "breaking-news" crawl on television.

The combination of stimulus bombardment and this evolutionary reflex affect attention and memory, especially for children, whose inhibitory systems are least developed. The oft-discussed 'continuous partial attention'

coined by Linda Stone (2009) for children today stems in part from their inability to inhibit the steady stream of stimuli they receive. When constantly distracted, they can never fully concentrate their attention, with downstream effects on consolidating information in memory.

The crux of many facts is this (Wolf, 2016, 2018). Children are being given digital devices from the minute they can sit in a high chair without regard to the qualitative and quantitative changes in children's attention, their increasing needs for continuous sensory stimulation, and the decreasing ability by our older youth to comprehend fully what they read. We do not worry that any of these children will fail to develop the important cognitive and perceptual skills honed by digital devices and necessary for the 21st century. We are buoyed by that. But we worry that along the way to becoming technically competent, a great many children today will never discover the power of print – books – to lift them out of their lives to discover whole new places, historical epochs, other cultures, and the feelings and thoughts of others they would never otherwise experience.

The problems, however, only begin there. As a result of the pandemic that kept all of us in our homes and on multiple screens, there is ever more pressure on parents to allow their older children longer time online instead of outside or at least out of their chairs. Current research on older youth and young adults in Europe, U.S., and Israel demonstrates the close connections among digital medium use, attentional problems, and obesity (Steiner–Adair & Barker, 2014), and between distracted reading styles and decreased comprehension (Barzillai, et al., 2017; Delgado, et al., 2019; Mangen & van der Weel, 2016). Research by Twenge and her colleagues (Twenge, 2019) on young people's reading habits over the last 50 years is summarized in their subtitle: "The Rise of Digital Media, the Decline of TV, and the (Near) Demise of Print". Perhaps the most depressing statistic that these researchers cite is the decline of daily reading of some form of print – whether magazine, book, etc. – from 60 percent in the late 1970s to 12 percent today. The authors used the notion of "displacement theory" to contextualize their results, where 82 percent of young people use social media today, more than likely *displacing* time they formerly might have given to reading.

Some researchers in neuroscience have shown that the more time spent on screens rather on books of fiction has a direct effect on the integrity of white matter connections in key language areas (Horowitz–Kraus & Hutton, 2018). The reality among youth is that there has been a shallowing in their reading and an increased expectation that their attention should be constantly outwardly engaged. Youth spend more and more of their 'school

time' on screens, and more of their 'free time' on a plethora of games on their various digital devices. We do not yet have a handle on all the changes that will result from this displacement of their time, but we do have evidence of its long-term sequelae in young adulthood.

The unexpected and most worrisome changes appear in the comprehension capacities of college-aged students when reading on print or digital-based mediums. The largest meta-analysis ever conducted on this topic was recently reported by European researchers in the E-READ Consortium with over 170,000 subjects in 58 studies conducted between 2000 and 2017 (Delgado et al., 2018). Results indicated that young people were significantly better in comprehension skills when reading the same text on print, rather than on digital screens. The researchers found that print enabled higher comprehension across genres and the benefit became more marked when a student was being timed. Perhaps most surprisingly, the superior performance when reading on print *increased* over the most recent years. In other words, the readers most likely to be digital natives were actually comprehending text better when reading it in print, rather than on screens. This research by scholars across Europe, Israel, and the United States portrays a generation that has grown up with digital reading and yet appears to be less likely or potentially less able to use their more sophisticated cognitive processes to the fullest extent when reading on screens.

A related body of research in Israel by Ackerman and Lauterman (2012) compared the reading skills among young adults on print and digital mediums and demonstrated the same trends, with an important caveat: When asked which medium produced their best performance, Israeli students "perceived" that they were better on digital. They had no knowledge that they read with less understanding and attention to detail when reading on screens. They falsely associated faster speed with understanding. A similar study in Israel by developmental neuroscientist Tami Katzir and her colleagues with much younger readers again showed similar, worrisome effects on comprehension (Golan et al., 2018). The fundamental illusion by many of our young is that speed illumines, rather than subtracts from the time the brain could allocate to the more demanding, deep reading processes which require *more time, not less*. Speed is neither illumination nor insight. Indeed it may detract from both, because the most reflective of our cognitive capacities take time. The skimming that has become our daily norm doesn't give time to think.

Adults fare little better, even with our more developed inhibitory systems. Increasing evidence from eye-movement research in Germany and

the United States indicates that all of us tend to skim, word-spot, and divide our attention frequently, when using digital screen devices. 'To skim to inform' is the new mode for reading (Baron, 2021; Liu, 2012). If more and more readers allocate less and less time to the more sophisticated processes like critical analysis, inference, and the more time-consuming contemplative functions, our society will change inexorably, the continuing theme of this paper.

It is perhaps an irony of our time that the older wisdom of Aristotle, Aquinas, and Nicholas of Cusa may provide us with a means of reconciling the complex issues we have created in our quest to become ever more advanced in information and knowledge. The following proposal incorporates Aristotle's admonition that a good society includes a contemplative dimension, Aquinas' emphases on the necessity for the role of truth in society, and Nicholas of Cusa's "learned ignorance" approach to reconciling contradictory "truths".

A developmental proposal

Based on the evolving knowledge about different mediums, the first author has pursued an approach that will insure the preservation of the deep reading processes that are advantaged by print reading *and* the expansion of new processes advantaged by digital mediums. The underlying concept is that of a *biliterate reading brain*, one that will develop over time and ultimately allow the child to grow into a reader capable of *deep reading across every* medium (Wolf, 2018, 2021). It begins at the beginning: on a beloved lap with parents reading books, reading to their children daily, if possible, from infancy through early childhood. We wish to emphasize the role that books play in the complex development of children, particularly children growing up in a digital culture. Our concerns involve what young children might miss – if digital devices and social media increasingly replace the multiple intellectual, social-emotional, and ethical roles that books can play in a life. As Israeli scholar Tami Katzir beautifully wrote (Katzir, 2021), the importance of empathy and perspective-taking in the development of the moral imagination of our young cannot be exaggerated, either for the child or for the health of our society.

The goal of the biliterate brain proposal is to ensure that those skills begin and are consistently developed through the medium of print and books for the first ten years of childhood. Not unlike Vygotsky's parallel developmental pathways for language and thought (Vygotsky, 1934), parallel paths of development are envisioned for print-based literacy and for

digital skills. For example, the initial development period from infancy to five years of age is conceptualized as largely separated into two domains, with print dominating all forms of reading by parents and caretakers to the child, and digital devices invisible until around two years, when they appear in the nursery like any other toy. That is, digital devices would be available occasionally, but never dominating the child's day, nor ever either used by the parent as reward or withheld as punishment. At five years of age, the parallel paths for print and digital mediums would be more clearly demarcated: with print and hard copy books used largely for teaching children to read. Digital mediums would be the "platform of choice" for developing those critical inferential, spatial, and conceptual skills needed by every 21st century child and provided by programming and coding activities (see important work of Relkin, de Ruiter, & Bers, 2021).

During the child's early literacy period from five to ten years, books would become a foundation for introduction to the deep reading processes. The world of books – from *Charlotte's Web* to *Harry Potter* to *Jane Eyre* – represents one of the most important sources of our next generation's ability to take on the perspectives and realities of others and make ever more sophisticated inferences and insights over a lifetime about others in our ever more connected and diverse society. As Hermann Hesse wrote in a poem simply called "Books", "All the books of the world will not bring you happiness, but build a secret path toward your heart" (Hesse, 2011, p. 34). It is the connection between heart and mind that we wish for our children's reading development, but it is does not come for free.

The rich, internal background knowledge we receive through books is as essential to the deep reading circuit as salt was to King Lear's pork, and as little understood by us as him. Our greatest leaps of imagination and discovery occur when making an analogy between what we know and what we hope to know. We fear that the formation of background knowledge in our youth and their ability to make these analogies is imperceptibly threatened by the great changes in both what they read and how they read. Without the diverse forms of knowledge conveyed by books, they will not know what they do not know. In short, we are concerned that the diminishing quantity and content of our youth's reading provides insufficient background knowledge for the formation of the deep reading brain circuit of expert readers.

We conceptualize the major intersections between the two mediums occurring after deep reading processes are firmly grounded in the fluent comprehending reader. For some children this may well occur around

fourth grade; for others much later. Individual variation will play an important role when teachers begin the careful introduction of deep reading skills on the digital medium. There will be no simple recipes here for individual children, particularly neurodiverse learners like children with dyslexia, who are sometimes better served by complementing their early acquisition of reading with practice on digital mediums.

Understanding the *purpose* of whatever the child (or adult) reads is essential for understanding what medium best serves a particular text. In addition, there is a pressing need for teaching all our children "digital wisdom" (see Coiro, 2014; Wolf & Barzillai, 2009) to prepare them with skills of discernment concerning the power of advertising, the cruelty of bullying, and the insidious nature of false information, falsely raised hopes and fears, and other tools of demagoguery in all its forms. Within such a context, it is the powerful foundation of deep reading processes like critical analysis and empathy that can serve as an antidote to the negative effects of digital culture. Most importantly, in a biliterate reading brain, such processes prepare our youth to think for themselves on any medium, wisely and well.

Understanding the potential promise and potential loss that digital culture represents for our species may be one of our most important challenges, particularly after a pandemic has caused over-reliance on the digital media. Our research group uses the concept of a biliterate reading brain to preserve the advantages of both print and digital mediums while working to understand and avoid the pitfalls. To achieve such a goal will take a vigilant society, one that appreciates and continuously examines the life beneath our words in a digital culture. As Walter Ong wrote, his largest worry concerned not the specific differences between mediums for written language, but the effect on those "steeped in both". In one of the most powerful statements about these issues, Pope Francis (2020) used Friedrich Hoelderlin's poem 'Hyperion' to insert a note of hope. "Where the danger is, also grows the saving power". Pope Francis (2020) went on to write "That's the genius in the human story. There's always a way to escape destruction. Where human kind has to act is precisely there, in the threat itself: that's where the door opens".

From our perspective as scientists and educators, we believe the door for our future opens with how we teach our young. The eminent American novelist Marilynne Robinson (2015) presciently wrote in her book *The Givenness of Things* that the "greatest tests ever made of human wisdom and decency will come to our generation or the next". The test is now.

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Governing Platformization in Europe

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Introduction

Online digital platforms have deeply penetrated every sector in society, disrupting markets, labor relations, and institutions, while transforming social and civic practices; more than that, platform dynamics have affected the very core of democratic processes and political communication. After a decade of platform euphoria, in which tech companies were celebrated for empowering ordinary users, problems have been mounting. Disinformation, fake news, and hate speech spread via YouTube, Twitter, and Facebook poisoned public discourse and influenced elections. The Facebook-Cambridge Analytica scandal epitomized the many privacy breaches and security leaks dogging social media networks. Further compounded by charges of tax evasion and the undermining of fair labor laws, big tech companies are facing a serious "techlash". As some argued, the promotion of long-standing values such as tolerance, democracy, and transparency are increasingly compromised by the global "exports" of American tech companies, which dominate the online infrastructure for the distribution of online cultural goods: news, video, social talk, and private communication (Geltzer and Ghosh 2018).

The evolving digitization and "platformization" of societies involve several intense struggles between competing ideological systems and their contesting actors, prompting an important question: Who is or should be responsible for anchoring public values in platform societies that are driven by algorithms and fueled by data? This paper tries to tackle this question, concentrating on the challenges Europe faces when trying to govern societies that are increasingly dependent on global networked infrastructures. I will first explore what position Europe occupies amid competing (Chinese and American) platform ecosystems in the current online world order. Next, I will zoom in on the American ecosystem and its mechanisms. After briefly elaborating on what public values should be anchored in this system and who are the responsible actors, I will focus on the challenges facing Europe. How can European citizens and governments guard certain social and cultural values while being dependent on a platform ecosystem which architecture is based on commercial values and is rooted in a neo-libertarian world view?

A New Geopolitical Order of Platform Ecosystems

The global online world is dominated by companies and by states. Two platform ecosystems dominate the online world in terms of geopolitics: one is American, the other Chinese. China governs an ecosystem that is controlled by the state and is operated by its own Big Five companies: Baidu, Alibaba, Tencent, Jingodon Mall, and Didi (the Chinese Uber). Alibaba and Tencent have lately become extremely powerful, branching out from their core businesses into every sector of society. They have become gatekeepers to the entire economy, wielding power over brick-and-mortar enterprises, pay-systems, communication channels, social networks, groceries, pharmacies, and so on. America has its own platform ecosystem, which is dominated by the Big Five tech companies Alphabet-Google, Facebook, Amazon, Apple, and Microsoft (GAFAM). Over the past two decades, this powerful ecosystem has spread to the rest of the world, and it is dominant in Europe, most of Asia (except for China), Africa, and South America (Jin 2015). In terms of market value, the Big Five form the world's fifth largest economy, after the United States, China, Germany, and Japan. Seven companies – the American Big Five plus Tencent and Alibaba – are in the top ten of public corporations ranked by market capitalization (Statista Portal 2018).

On the face of it, these two ecosystems are each other's ideological antipodes. The Chinese state exerts strict power over their tech companies, protecting the internal market through its "firewall". In the American system, the market controls the online infrastructure, which the US government hardly seeks to regulate. Closer inspection reveals the two ecosystems are not as isolated as they appear. American tech companies are increasingly adjusting their technologies to be allowed to enter the Chinese ecosystem, caving in to the regime's censorship laws or aligning with Chinese companies. For instance, Google is developing a search engine (project Dragonfly) that adapts to Chinese censorship rules, and Chinese tech companies have obtained stakes in American companies (e.g., Didi in Uber). Although I cannot go into details, the two systems that appear to be entirely separate are interconnected at many levels.

Squeezed in between the United States and China is the European continent, which has few major technology companies and operates a relatively small percentage of all digital platforms. By and large, Europe has become dependent on the American platform ecosystem, which techno-commercial architecture is rooted in neoliberal market values. But beyond market value, the platform ecosystem revolves around societal power

and influence. The Big Five increasingly act as gatekeepers to all online so-cial traffic and economic activities; their services influence the very texture of society and the process of democracy. In other words, they have gained rule-setting power. There have been many clashes between American tech companies and European regulators as well as national legislators over pub-lic values, including privacy (resulting in the EU's General Data Protection Regulation), fair competition (resulting in the EU levying substantial fines on Google in 2016 and 2018), tax evasion (resulting in Facebook changing its tax-base policy), and the condemnation of fake news and hate speech (re-sulting in the German parliament imposing a twenty-four-hour deadline on social networks to take down such expressions). Fighting on several fronts, the EU tries to strictly enforce its laws in a new global networked space.

We often hear from Silicon Valley CEOs that Europe is "cracking down" on American Big Tech out of "jealousy" (Solon 2018). I take a dif-ferent stance on this issue: The American platform ecosystem hardly allows for public space on the internet and tends to favor commercial values and private interests over public ones. Therefore, Europe should articulate its own governance strategy based on its appraisal of a strong public sector, independent institutions, fair taxation, and the common good. According to Peters and Weggeman (2010), the Rhineland model presumes an active government that is involved in major social issues, such as minimizing pov-erty and environmental protection, advocating a strong public sector, and government regulation and enforcement. Protecting the Rhineland model of a social market economy should not be considered an economic liabil-ity but rather an asset: A loss of public trust is ultimately a loss of business value. In the wake of the Cambridge Analytica scandal, Facebook lost an estimated thirty-five to eighty billion dollars in market value. As Mazzuca-to (2018) argues, it is important to assess what constitutes *societal* value in addition to market value, because both types of values are integrally part of a nation's economic strength. Before getting back to my basic question – how can European societies guard public values and the common good in an online world – we first need to examine how the American platform ecosystem is structured.

How Does the American Platform Ecosystem Work?

Platformization is an enormously complex phenomenon, which has disrupted not just markets and sectors, but has started to uproot the infra-structural, organizational design of societies (Helmond 2015; Plantin et al. 2016; Van Dijck, Poell & Nieborg, 2019). It is crucial to study *how* platform

ecosystems operate, because we still know too little about big platforms' technical operations, their governance and business models – partly as a result of those being trade secrets. Roughly put, the Big Five operate *infrastructural platforms* (e.g. cloud services, data centers, satellites, etc.), *intermediary platforms* (e.g. social networks, pay systems, login and identification services, cloud services, advertising agencies, search engines, app stores, navigating services, etc) and sectoral platforms (e.g. educational apps, health apps, etc) (Van Dijck, 2020; Van Dijck, Poell, and De Waal 2018, chapter 1). The potential to integrate dataflows both horizontally and vertically at the back-end of these platforms constitutes the invisible power of these five Big Tech companies across the different layers of the ecosystem. In the meantime, nation-states increasingly rely on the global system's datafied and commodified mechanisms for their vital economic and democratic functions, such as Google's and Facebook's advertising systems and Facebook's and YouTube's role in the distribution of news and video content. Besides owning and operating the infrastructural core of platforms, the Big Five are also branching out in a variety of *sectors* that are progressively interwoven with this online infrastructure. Indeed, platformization affects *all* sectors in society, both private (e.g., transport, finance, retail) and public (e.g., education, health), hence also affecting the common good.

The accumulation of platform power happens at two levels: (1) through ownership relations and partnerships between tech companies that operate both infrastructural and sectoral platforms and (2) through the invisible mechanisms underlying the platform ecosystem, such as the steering of data flows, envelopment of users, invisible selection criteria, and algorithmic lock-ins that facilitate path dependency. (Van Dijck, Poell & De Waal, chapter 2). At both levels, power is exercised *between* infrastructural and sectoral platforms, as well as *across sectors*. Tech companies leverage control over data flows and algorithmic governance not just through a few major infrastructural platforms (e.g., Alphabet-Google in Search and Cloud services) but extend these powers across many sectors (e.g., Google Apps for Education, Google Health, Google Shopping). Unprecedented network effects across the global online ecosystem are thus gained through the potential of horizontal, vertical, and "diagonal" integration of data flows, creating user lock-ins and path-dependency (Van Dijck 2020).

The platform mechanisms underpinning the ecosystem are largely opaque and out of sight for users and governments. Platformization is overwhelmingly driven by commercial interests that often take precedence over societal values. Some of the main problems are an almost total lack of

transparency into how data flows are steered within and between sectors, how algorithms influence user behavior, how selection mechanisms impact the visibility of content, and how business models favor economic transactions over the public interest. In addition, public sectors that historically serve and protect the common good, such as education and health, are rapidly encapsulated in the American platform ecosystem, where they risk being turned into privatized commodities. Platform companies inadvertently take over vital functions from state and public bodies once they become major gatekeepers in the circulation of health and educational data flows as well as in news and information cycles. Platforms thus increasingly become the new infrastructural providers. As Mark Zuckerberg observed in 2017, Facebook wants to be a "social infrastructure" – a term that resonates with the notion of public utilities. Global social infrastructures, as we know, come with awesome responsibilities not just for the welfare of the company and its shareholders, but for the wellbeing of the people as societal stakeholders.

Who Is Responsible for Public Values and the Common Good?

If European societies want to guard public values and the common good in an online world, they first need to articulate *what kind of public values* they want to foreground when designing an ideal digital society. Norms and values are often left implicit. Looking at regulator's disputes with tech companies over the past few years, it seems clear that values such as privacy, security, accuracy, and transparency are at stake; Europeans insist on protecting their private information, securing their internet access, relying on accurate information, and pursuing transparency in terms of service. But beyond these principles relating directly to the internet as a digital environment, there is also a need to articulate public values that pertain to much broader societal issues, such as democratic control of the public sphere, a level playing field for all actors, anti-discrimination practices, fairness in taxation and labor, and clarity with regards to (shared) responsibility and accountability. Public values are not a simple set of rules that you can buy "off the shelf" and implement in society; on the contrary, they are disputed and negotiated at every level of governance – from schools and hospitals to local city councils, and from national governments to supra-national legislators.

The negotiation of public values is historically anchored in institutions or sectors, where it is moored in laws, agreements, or professional codes. For instance, in news journalism, public values such as accuracy and fair-

ness in reporting are (self-)regulated via professional codes; in education, the norms for privacy, fairness, and accessibility are controlled partly by the government and partly by a school's agreements with parents; urban transport is regulated by city councils and local governments. Remarkably, tech companies over the past decade have preferred to bypass institutional processes through which societies are organized – sectoral regulation, public accountability, and responsibility – by claiming their exceptional status. Facebook, Google, Uber, and other big platforms have argued they are mere "facilitators", connecting users to creators or producers, and connecting content to users. By insisting on their status as "'connectors" and avoiding regular legal categories, platforms and their operators have avoided taking responsibility. Until 2017, Facebook firmly denied its functioning as a "media company" although more than half the news consumed by Americans comes to them through Newsfeed. And Uber's refusal to accept its status as a "transportation company" was fought all the way up to the European court, where it was finally confirmed in December 2017.

So who *is* responsible for guarding public values in a digital society? The simple answer to this question is: all of us. But that answer is not very helpful. Let me break down "all of us" into three *types* of actors we need to identify: market, state, and civil society. In the Chinese system, the state obviously controls market and civil-society actors. In the American system market actors – from big corporations to micro-entrepreneurs – are left to themselves to organize a "fair" market, leaving a small role for state or civil-society actors. The European Rhineland model ideally balances the powers of state, market, and civil-society actors in multi-stakeholder organizations. Obviously, these multiple stakeholders do not have the same interests, so government bodies need to take the roles entrusted to them as legislator, regulator, moderator, and enforcer to negotiate the public interest. However, because the architecture of the American ecosystem is uniquely engineered by market actors – and its infrastructure is dominated mostly by the Big Five – it is difficult for state and civil-society actors in Europe to put their stamp on these negotiations. Governing the platform society has turned out to be a big struggle over public values and the common good.

Most visible to the public eye are the outcomes of a wide range of negotiation battles; the concerns underlying these negotiations involve a wide variety of public values, but it is not always immediately evident what the common denominators are. We read about EU regulators levying big fines upon American tech firms and understand this is about the principle of "fair access" and a "level playing field" of markets. We witness national

governments such as Germany impose strict rules on social networks to ban hate speech and fake news; of course, such judgment involves a fine balancing act between the right to free speech vis-à-vis the public values of accuracy, fairness, and nondiscrimination. In 2016, the EU asked Facebook, YouTube, and Twitter to sign a voluntary "hate speech code" that requires the companies to review and remove illegal forms of hate speech from their platforms within twenty-four hours and makes it easier for law enforcement to notify the firms directly. Municipalities, schools, and hospitals negotiate contracts with big tech giants such as Google to exchange data for platform services while bartering their citizens', students', and patients' right to privacy and accessibility. Each negotiation between (big) tech companies, government agencies, independent institutions, and citizens discloses how interests sometimes clash, and sometimes converge when negotiating public values. Many of these tradeoffs boil down to a set of fundamental questions such as who owns and exploits data flows, who controls algorithmic governance, and who is *responsible* and *accountable* for their impact?

To be sure, there is not a single one-size-fits-all solution to the problem of responsibility and accountability in a platform society. The question how Europe can live up to its preferred Rhineland model of protecting public values and the common good while lacking control over a corporately driven platform infrastructure is a thorny one. Therefore, we need to look at various (supra-)national, local, and individual levels of involvement to define which strategies may help Europeans tackle the multitude of complex challenges facing them in the online world. Below, I will articulate five such recommendations or strategies, directed at companies, governments, and researchers.

Five Recommendations for Europe

The *first* recommendation is leveled at the supra-national level, which is by far the most influential when it comes to countering the rule-setting powers of the Big Five and protecting public values in multisided platform markets: Europe should take *a comprehensive approach to regulating platforms and data flows, not just as markets but as societies*. Over the past few years, we have seen an assertive enforcement of antitrust laws, resulting in two substantial fines for Alphabet-Google, the first one (in 2016) for giving preference to its own retail service (Google Shopping) over other services; the second one (in 2018) for forcing phone manufacturers to incorporate a dozen of its own infrastructural apps in mobile devices. On the policy

side, the EU has energetically assumed its responsibility to govern digital markets, by initiating the Digital Services Act and Digital Markets Act in 2020 (EU 2020). At the same time, the EU realized digital societies cannot simply be governed as *markets*; markets are integral parts of societies that also encompass public space and public services. In response to the pervasive spread of online fake news, the European Commission commissioned a comprehensive report, which in 2018 concluded the problem requires taking a multi-stakeholder approach and entering negotiations at various levels with the big tech companies (European Commission H-level Expert Group 2018). After years of political deliberation, the General Data Protection Regulation (GDPR) took effect in May 2018; the encompassing directive shows how the European definition of privacy fundamentally differs from the American one.

Despite its major efforts, the EU has not yet managed to articulate a comprehensive view on platform societies – a set of principles that would provide more clarity about what the EU expects from companies, states, and civil-society actors when it comes to fairness and democracy in a digitally connected world. In 2016, a survey among European stakeholders (market, state, and civil society) revealed a number of key issues concerning data flows and platforms, asking for more clarity about the legal status of platforms and the specific activities they are engaged in, as well as for better enforcement of existing legislation (European Commission 2016b). This inventory has not yet led to a broad set of principles on the basis of which countries, municipalities, institutions, or citizens can rely to negotiate specific public values in specific contexts. Every single day, new platforms enter the daily lives of citizens, defining the conditions for local transport, schooling, health care, and so on. More principled guidelines concerning the status of platforms, the ownership of data flows, and algorithmic governance could help everyone to negotiate public values from the stage of platform design to their implementation in daily practices.

This brings me to a *second* recommendation, leveled at companies: *public values need to become visible as part of a platform's architectural policy and design*. As a result of an avalanche of problems, Facebook and Google were forced by citizens, public opinion, advertisers, and governments to take responsibility over their role as "societal" influencers. The impact of Facebook in the American elections, the social network's role in fueling hate speech in Myanmar, Google's and Apple's moves to abide to censorship laws in China – each new controversy forces the Big Five to articulate where they stand on major societal issues such as hate speech, fake news,

democratic control, and authoritarian censorship. Western-European governments put increasing pressure on tech companies to acknowledge and accept the responsibility that comes with size; they demand transparency when operating in their markets. In 2016, the EU asked Facebook, YouTube, and Twitter to sign a voluntary "hate speech code" that requires the companies to review and remove illegal forms of hate speech from their platforms within twenty-four hours and makes it easier for law enforcement to notify the firms directly. Advertisers, for their part, have forced tech companies to adapt their algorithms to make sure their products are not associated with hate speech or fake news. And Google's own employees have critically interrogated their managers and CEOs to reconsider project Dragonfly as part of the company's disputable move to accommodate Chinese rulers.

The explicit articulation and endorsement of public values, however, should not have to be the result of external pressure and ad hoc remedies, but ought to be discernably integrated in a platform's policy and algorithmic design. Transparency and accountability go hand in hand, and it is obvious that self-regulation of platform operators can never work if the most basic conditions for public oversight and accountability are lacking. Public values by design requires courage on behalf of platform owners, and it likely takes some pushing from state and civil-society actors to force companies to act responsibly. Eventually, a company's efforts to engage multiple stakeholders in its design lead to more public trust in platforms and their operators. If voluntary codes and public pressure do not work, additional regulatory efforts are necessary.

Which brings me to the *third* recommendation: *the need to update and retool regulatory frameworks*. The current national and supra-national European frameworks for regulating platform societies (such as the DSA/DMA) are still inadequate; legal discourse often lack the appropriate vocabulary to capture the techno-economic changes in the online world. Indeed, competition and antitrust laws protect a level playing field; privacy law concentrates on individual citizens' right to privacy; we have consumer protection law, taxation laws, and trade law that each deal with a specific piece of legislation and enforcement. But the sum of each set of laws may not be sufficient to deal with the platform ecosystem as a whole. For one thing, the increased significance of data-driven, platform-based, and algorithmically governed interaction is hardly reflected in legal discourse. Besides, the legal system is built on a division between infrastructures and distinct market sectors – distinctions that are no longer tenable in an ecosystem run

by multihoming platform companies on top of a multilayered inscrutable architecture. Neither do prevailing regulatory frameworks account for the data flows that run both between infrastructures and sectors and between sectors, nor for the algorithmic lock-ins between (partnering) platform companies and rivaling markets. Indeed, platformization is so powerful precisely *because* it is sector-agnostic, device-agnostic, and border-agnostic.

In order to update regulation within the EU, we need to look more principally at how platforms function in society and adapt our instruments accordingly. One major problem is that the boundaries between infrastructural, intermediary, and sectoral platforms and services have become inherently fluid; the same holds true for the boundaries between private and public sectors. Mechanisms such as combining data flows, algorithmic selection, and user envelopment – adding another group of customers on one side and using those revenues to reduce the price charged to another side of the platform – steer the invisible "underwater" dynamics of the platform ecosystem. A handful of companies seem to have more power than nation-states over the digital infrastructure without the necessary checks and balances that come along. So the real question is: Are societies going to grant GAFAM infrastructural, rule-setting power or will tech companies collaborate with European governments and civil-society partners to define these principles, laws, and rules?

My *fourth* recommendation pertains to national governments: *stimulate and empower state and civil-society actors to develop nonprofit and public platforms.* The commercial ecosystem of platforms has currently no public space and very few nonprivate competitors. If European governments are serious about pursuing a tripartite balance between market, state, and civil-society actors, they have to seriously invest in the public and nonprofit sector. In order to prevent involuntary outsourcing of important – even democratically vital – public tasks to a corporately-driven ecosystem, European states may need to stimulate civil society and public initiatives. Estonia has set an interesting example by launching its e-government services: a transparent online identification system that forms a portal to services for e-voting, e-residency, and other online facilities in the educational and health sector. In taking the lead, the Estonian government not only articulates transparent public standards for an open digital society, but also promotes innovation. In other European countries, civil-society groups have initiated the development of public identification and authentication systems, such as IRMA in The Netherlands and Bank-ID in Sweden. The Estonian, Dutch, and Swedish examples are very interesting types of platform innovation in-

volving multiple stakeholders, but they are rather isolated from the current concerns about the platform ecosystem as a systemic whole.

At the institutional level, this recommendation also applies to schools and universities, stimulating them to create and distribute their own open online course material, rather than adopting software and administrative monitoring systems that Google and Microsoft offers them "for free" – or, more accurately, in exchange for precious student data (Kerssens & Van Dijck, 2021). If hospitals relied more on their collective, collaborative power to negotiate data-analytics systems with companies *before* adopting patient data exchanges, this might strengthen the public sector as such. Schools and universities also have a specific role in the empowerment of data-conscious citizens and skilled public servants. Digital innovation at institutions and local governments should be encouraged if only for the reason that this keeps the public sector an attractive and innovative place to work for. The *White Paper on Digital Platforms*, published by the German Ministry of Economic Affairs and Energy in 2018, argues that investing in public institutions to develop their own platforms and technologies is crucial for many reasons, but one important motive is to close the knowledge gap with companies and keep the public sector competitive for engineers.

Finally, my *fifth* and last recommendation is leveled at researchers at universities and engineering labs around the world: *to pursue a collaborative interdisciplinary approach towards designing a responsible platform society*. Scholars from various disciplines cannot solve the complex challenges facing Europe and other continents by keeping their technical, legal, philosophical, or social science expertise isolated from each other and from societal needs. More than ever, academics have to combine their expertise, both methodologically and practically, to tackle questions of privacy-by-design, algorithmic governance, and trust in data usage and storage. Researchers can help set the agenda for an interdisciplinary and multifaceted approach to the big questions we are facing in the age of datafication, platformization, and digitalization. Responding to urgent questions about (competing) public values and the common good in a platform society – such as issues of privacy vis-à-vis security, efficiency vis-à-vis surveillance – is conditional for successful multi-stakeholder efforts. Academics may need more incentives to collaborate with companies, civil-society actors, and public partners to experiment with new technologies and test policies – each while guarding their specific interests in the face of a common challenge. Exchanging best practices among stakeholders will certainly enhance the development of a uniquely European approach to creating responsible digital societies.

Conclusion

Europe can indeed do more to carve out public space in an online world. It needs to design and present a strategy that clearly explicates where its stands on public values, public sectors, and the common good. Needless to say, that requires political will and courage. The ideal platform society does not exist, and it will be hard to recalibrate the Western-European Rhineland model to make it fit with the American ecosystem's infrastructural architecture that privileges commercial values over public ones. Indeed, its architecture is currently firmly cemented in an American-based neoliberal set of principles that defines its operational dynamics. If European countries and the EU as a supra-national force want to secure their ideological bearings, they need to understand the ecosystem's underpinning mechanisms before they can start fortifying their legal and regulatory structures built on it. The implications of platformization on society are profound, as these systems are shaping not only norms and values, but the very fabric of society.

Governing digital societies in Europe takes a serious effort at all levels, from local municipalities to national governments, from schools to collaborating universities, and from city governments to the European Parliament. Squeezed in between the Chinese ecosystem and the American one, European countries need to realize the limitations and possibilities of these competing networked infrastructures and articulate their position in the wake of these emerging online superpowers. Public values and the common good are the very stakes in the struggle over platformization around the globe. Viewed through a European looking glass, governments at all levels, independent public institutions, and nonprofits can and should be proactive in negotiating those values on behalf of citizens and consumers. Implementing public values in the technological and socio-economic design of digital societies is an urgent European challenge that cannot be left to companies alone. If we want the internet to remain a democratic and open space, it requires a multi-leveled, multi-disciplinary, and multi-stakeholder effort from governments, companies, citizens, and researchers; after all, they are jointly responsible for building it.

Acknowledgement

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Digital Media Images: A New Political Economy of Light

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1. Disguised reality

In this intervention, I will try to introduce a reflection on the status that images have acquired within the complex system of contemporary media, often referred to as *digital capitalism, data capitalism* or *platform society*.[1] My speech, therefore, moves between media studies and visual culture studies – though, in the final part, I will propose a dialogue between these disciplines and the political economy of material and symbolic resources.

To conduct this reflection, I will use an example that seems to me profoundly revealing: the video filters for *face distortion or manipulation effects* that are spreading with impressive speed on various social platforms and particularly on Instagram. So, let me first introduce this case.

In August 2019, an update to Instagram (a social media enterprise owned and controlled by Facebook) permitted users to submit their own filters to the app's Effects Gallery. Some of these (such as the trendy one FixMe), when applied to photos, would mimic the effects of facelifts, Botox injections, and other surgeries. In October 2019, Instagram banned the publication of photographs (especially selfies) that contained distortion effects on the subject's face. The decision was put forward by the concern that these images could contribute to the spread of unrealistic beauty standards, linked to negative body image among users – in particular after some claims that images depicting self-harm and depression on the site had contributed to a 14-year-old British teenager's suicide.

However, the decision was short-lived. On August 6, 2020, the platform decided to reintroduce face distortion effects; as stated in a post on Face-

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[1] Dan Schiller, *Digital Capitalism*, The MIT Press, Cambridge (Mass.), London 2000; José van Dijck, Thomas Poell, Martijn de Waal, *The Platform Society. Public Values in a Connective World*, Oxford University Press, Oxford – New York, 2018; Nick Couldry, Ulises A. Mejias, *The Costs of Connection. How Data Is Colonizing Human Life and Appropriating It for Capitalism*, Stanford University Press, Stanford (Cal.) 2019. For a quick introduction to visual studies see Alexis L. Boylan, *Visual Culture*, The MIT Press, Cambridge (Mass.), London 2020.

book by Spark AR creators, the community gathering the Instagram creators of effects, "We want AR effects to be a positive and safe experience for our community while allowing creators to express their artistic perspectives. We recognize that creators predominantly use face alteration and feature augmentation to create artistic, surreal, fantasy effects that many enjoy and that these effects are widely available across other platforms".[2]

After all, we must recognize that the ban was an unrealistic decision: the business of face manipulation effects is widespread and growing. They are used by more than 1 billion people a month on Instagram alone. Other social media such as TikTok and Snapchat offer similar effects. The above-mentioned Spark AR creators community counts more than 600,000 members from 190 countries, for a total of more than 2 million effects available for users. AR effects are presently expanding on other messaging platforms of the Facebook galaxy, such as Messenger, Instagram and Portal.[3] Above all, they involve a considerable flow of money: AR filters are partly free (and as such contribute to fuel the flow on platforms), partly for sale, and partly (increasingly) provided in forms of branded content by fashion, cosmetic and plastic surgery companies ("try the product before purchasing it!").

Of course, some of them are just funny and amusing; yet, many others (and I would say most of them) aim to "beautify" the bodies and especially the faces of the portrayed subjects: "Today, … more and more young people – and especially teenage girls – are using filters that 'beautify' their appearance and promise to deliver modelesque looks by sharpening, shrinking, enhancing, and recolouring their faces and bodies".[4]

[2] Spark AR Community, "Policy Update: Face-Altering Effects on Instagram", August 6, 2020, https://www.facebook.com/groups/SparkARcommunity/permalink/950326835379359

[3] Amanda Silberling, "Facebook's Spark AR platform expands to video calling with Multipeer API", *Tech Crunch*, June 2, 2021, https://techcrunch.com/2021/06/02/facebooks-spark-ar-platform-expands-to-video-calling-with-multipeer-api/

[4] Tate Ryan-Mosley, "Beauty filters are changing the way young girls see themselves", *MIT Technology Review*, April 2, 2020, https://www.technologyreview.com/2021/04/02/1021635/beauty-filters-young-girls-augmented-reality-social-media/. See also, among others interventions, Anna Haines "From 'Instagram Face' To 'Snapchat Dysmorphia': How Beauty Filters Are Changing The Way We See Ourselves", in *Forbes*, Apr 27, 2021, https://www.forbes.com/sites/annahaines/2021/04/27/from-instagram-face-to-snapchat-dysmorphia-how-beauty-filters-are-changing-the-way-we-see-ourselves/; Maghan McDowell, "The ethics and future of flattering AR filters", *Vogue Business*, 2 March 2021, https://www.voguebusiness.com/technology/the-ethics-and-future-of-flattering-ar-filters.

How to define this kind of image? The effect creators and many commentators speak of a new frontier of *augmented* or *expanded* reality – and declare that their mission is that of *redefining* reality.[5] This terminology is not entirely precise: these effects technically correspond to what is defined as *mixed reality*: in this case, indeed, a digitized moving image is automatically combined with elements and determinations artificially produced by the machine to produce a hybrid entity in which the visual data "extracted" by reality are intimately blended with "artificial" ones. In this respect, we can take a step forward. If we look at reality, we realize that it is neither *augmented*, nor *expanded* or even *redefined*, but more properly *rigged*: consequently, we should more correctly define these effects as devices producing *disguised reality*.

As I mentioned at the beginning, I intend to use the example of *disguised reality effects* to introduce a reflection on the status that images have acquired within the *platform society* and *digital capitalism*. I will try to grasp this status by identifying three fundamental characteristics of contemporary images: I will consider them in turn as *technological objects*, as *practical objects* and as *economic-political objects*. We will see that in each of the three cases, the example of the disguised reality effects will prove to be a good ground for analysis and exemplification of my assumptions.

2. Images as technological objects

In the 80s, the Czech philosopher Vilém Flusser defined "modern" pictures, provided by film and television, as *technical image*s.[6] Flusser also heralded the advent of images more directly linked to the management of information; yet, what subsequently happened exceeded Flusser's predictions. Today, images do not simply arise from the "digitization" of previous photographic or electronic images; instead, they entirely derive from data management processes, according to a scheme that includes three major steps.

(1) The *first* step is the *extraction/capture/ingestion* of data which can take place either through the acquisition of patterns of photons (intended as components of the electromagnetic band, not necessarily visible to the hu-

[5] Spark AR Team, "Women Redefining Reality. Ten creators share their insights and advice for women exploring AR", 4 December 2020, https://sparkar.facebook.com/blog/women-redefining-reality/

[6] Vilém Flusser *Into the Universe of Technical Images* (1985), Introduction by Mark Poster, Translated by Nancy Ann Roth, University of Minnesota Press, Minneapolis – London 2011.

man eye) by employing sensors, or through the acquisition of information through the use of interfaces.

(2) The *second* step consists of cleaning and sorting the data in data sets; starting from here, the data can be manipulated (as when we modify the parameters of a selfie), combined (as in the case of disguised reality), or subjected to extraction processes (as when our face is used to enrich a database for biometric recognition).

(3) This set of processes, often applied jointly, gives rise to more complex *data-cubes*, which are at the core of the *third step*. Indeed, they can be translated into concrete manifestations employing devices generically called "actuators"; these can be of two kinds. The first are *practical* ones, such as when a mechanical arm retrieves a piece that the sensors and recognition algorithms have identified as defective on the assembly line. The second are *sensory actuators*: they correspond to the various types of screens (from the huge ones in big city squares, to the microscopic ones used in smart glasses and headsets for augmented or virtual reality) translating the data cubes into light and sound patterns. It is only at this point that we can speak of the constitution of an *image*.

Based on this framework, it is immediately evident that contemporary digital images have a different status from photographic or electronic technical ones, for two reasons. First, they no longer constitute the "immediate" and partially automated appearance of a distant portion of the world; rather, images should be presently considered as the interactive and dynamic display of a nearby portion of a data cube. Secondly, they do not constitute the "digitization" of previously existing photographic or electronic images, since the data cube derives only minimally from photographic traces (i.e. from the translation into data of photon patterns): they are mostly "original" products deriving from the interaction between data gathered from different sources. Within the data cubes, photon patterns extracted from the "real" visible world cannot claim any status of superiority. Therefore, this new type of images is not technical but *technological*; scholars often refer to them as "algorithmic images", but since the computational process component is prevalent in their constitution, I think it is better to talk about *visual algorithms*.[7]

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[7] The literature of visual studies on digital imaging is boundless. See only Jacques Khalip, Robert Mitchell (eds.), *Releasing the Image. From Literature to New Media*, Stanford University Press, Stanford (Calif.) 2011; Liv Hausken (ed.), *Thinking Media Aesthetics. Media Studies, Film Studies and the Arts*, Peter Lang, Frankfurt am Main 2013; Steve

The images resulting from the application of *disguised reality effects* are a perfect example of *visual algorithms*. Indeed, they arise from the combination of moving photographic traces and adjustments introduced "live" by computer vision, facial recognition and Artificial Intelligence. From this perspective, we must be careful not to confuse them with the "old" Photoshop effects. This new generation of filters uses sophisticated biometric tools to apply the effects to the face in motion in completely realistic videos showing subjects talking, moving and assuming different expressions.[8] Their way of acting is somewhat similar to the so-called *deep fakes*, which indeed use the same algorithms.[9]

3. Images as practical objects

This new way of thinking about images as visual algorithms, that is, technological objects intimately linked to data management, leads us to the second salient feature of contemporary images: we must consider them as *practical objects*. Visual algorithms are not intended for *contemplation* but for *action*, and are themselves equipped (thanks to the devices that allow and discipline their uses) with a specific *agency*. Let me explain this point with some practical examples, still linked to my introductory case.

The web is full of facial analysis services. For example, the Qoves studio platform (based in Australia) provides a free "facial aesthetics consultancy" service (https://www.qoves.com/): an AI analyzes your face starting from your photograph and predicts its aesthetical flaws and their probability of manifestation. The platform suggests appropriate cosmetic surgery and cosmetic products that help prevent or fix these failures. Similarly, the

F. Anderson, *Technologies of Vision, The War Between Data and Images*, The MIT Press, Cambridge (Mass.) – London 2017; Krešimir Purgar, *Pictorial Appearing. Image Theory After Representation*, Transcript Verlag, Bielefeld 2019; Johanna Drucker, *Visualization and Interpretation. Humanistic Approaches to Display*, The MIT Press, Cambridge (Mass.) – London 2020.

[8] "Beauty filters are essentially automated photo editing tools that use artificial intelligence and computer vision to detect facial features and change them. They use computer vision to interpret the things the camera sees, and tweak them according to rules set by the filters' creator. A computer detects a face and then overlays an invisible facial template consisting of dozens of dots, creating a sort of topographic mesh. Once that has been built, a universe of fantastical graphics can be attached to the mesh. The result can be anything from changing eye colours to planting devil horns on a person's head". Tate Ryan-Mosley, "Beauty filters are changing the way young girls see themselves".

[9] Samuel Woolley, *The Reality Game. How the Next Wave of Technology Will Break the Truth and What We Can Do About It*, Public Affairs, London 2020.

Face++ platform (https://www.faceplusplus.com/) offers a series of free services related to facial recognition and manipulation: for example, the Beauty scoring system, which

> like Qoves uses AI to examine your face. But instead of detailing what it sees in clinical language, it boils down its findings into a percentage grade of likely attractiveness. In fact, it returns two results: one score that predicts how men might respond to a picture, and the other that represents a female perspective.[10]

These practices can be considered frivolous; however, they are based on very complex and advanced technologies that sometimes derive from and lead to less innocent uses. First, there are *economic* implications: the analyzes of one's face lead to hyper-targeted and tailor-made advertising proposals; moreover, the images of faces are a rather valuable commodity in the data market, since they are used to train artificial intelligences for facial recognition and for the generation of synthetic faces to be used for false profiles on social networks.

Moreover, algorithms of facial recognition and evaluation hide a series of *social* entanglements. For example, professional moderators of social platforms are beginning to apply beauty scoring algorithms to ban some faces marked as ugly and unpleasant:

> The makers of TikTok, the Chinese video-sharing app with hundreds of millions of users around the world, instructed moderators to suppress posts created by users deemed too ugly, poor, or disabled for the platform, according to internal documents obtained by *The Intercept*... TikTok moderators were told to suppress users with "abnormal body shape", "ugly facial looks", "too many wrinkles", or in "slums, rural fields" and "dilapidated housing".[11]

Not only: these types of images are also involved in *political* dynamics. The Face++ algorithmic engine is implemented by one of the giants of the biometric recognition sector, the Chinese company Megvii, the largest third-party authentication software provider globally. In May 2019, the NGO Human Rights Watch reported that parts of Face++ code was used

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[10] Tate Ryan-Mosley, "I asked an AI to tell me how beautiful I am", *MIT Technology Review*, March 5, 2021 https://www.technologyreview.com/2021/03/05/1020133/ai-algorithm-rate-beauty-score-attractive-face/

[11] Sam Biddle, Paulo Victor Ribeiro, Tatiana Dias, "Invisible censorship", *The Intercept*, March 16 2020, https://theintercept.com/2020/03/16/tiktok-app-moderators-users-discrimination/

by the Chinese Government to collect data on and track the Uighur community in Xinjiang. Even though the involvement of Megvii in the Uighur case is still controversial (in June 2019, Human Rights Watch released a correction to its report stating that Megvii did not appear to have collaborated on IJOP), nonetheless the involvement of Megvii in the Chinese government's surveillance network is a proven fact.

These episodes allow us to grasp how, behind the light and frivolous uses of visual algorithms, more serious, practical and sometimes disturbing uses emerge. In this sense, the boundary between art and media on the one side and practical and extra medial uses of images on the other one, becomes very blurred – and, in many cases, it turns out to be only a type of window dressing. For this reason I talk of a "postmedia" condition with regard to the use of contemporary image production and management devices. To sum up, as technological objects, *visual algorithms are practical and operational tools*, equipped with specific forms of agency: they operate in the real world with very concrete and immediate effects.

4. Images as economic-political objects

A third conceptual key that can help us understand the role of images in the contemporary context is considering them as *economic-political objects*. Obviously, images are part of a political economy of the media in the traditional sense, as they feed a global market of massive financial dimensions. However, I intend to propose a vision of a political economy that is not linked in the first instance to the market and finance, and instead possesses a broader scope: I, therefore, consider the economy any regulated management of extraction, production, circulation, exchange, accumulation, deprivation and disposal of resources; since these resources are continually shared or shareable, and since they are managed within a common space, economics is always a *political* economy.[12]

This interpretation allows us to understand that visual algorithms derive (also in historical terms) from the connection and conjunction of three types of resources and that consequently, they cross and link three kinds of economies: that of *images* as material objects, that is (moving) pictures; that of the *light* necessary to produce and in some cases transmit the images; and that of *information* and data. Each of these kinds of resources is measured by a minimal unit: respectively, the pixel, the photon, and the

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[12] Ruggero Eugeni, *Capitale algoritmico. Cinque dispositivi postmediali (più uno)* [*Algorithmic capital. Five post-media devices (plus one)*], Morcelliana Scholè, Brescia 2021.

bit. Furthermore, the joint management of these three types of resources through visual algorithms allows the administration of a large number of other resources: of *immaterial* type (for example, the *reputational* resources linked to the beauty of the face; or the *attentional* ones linked to time and concentration spent on the use of devices); of *agentive* type (the possibilities of action or their foreclosure related to facial recognition in various situations and in particular in surveillance regimes); and of *material* type (the sale of beauty products or plastic surgery operations related to beauty assessment; the expense for the purchase of particular effects of disguised reality; the accumulation of datified faces and the refinement of recognition algorithms to be resold on the big data market).

5. Conclusions

In conclusion, if images circulate so widely within contemporary society, it is because they are no longer just "pictures" – that is, objects to be observed or contemplated from a distance. Contemporary technological images, which I have called *visual algorithms*, are *practical devices capable of acting in and on the world, regulating the flows of and exchanges between different and multiple types of resources.*

Therefore, we will have to study images more and more as tools of power that play an actual and fundamental role in distributing, redistributing, and accumulating common resources. It seems that a meeting between visual studies and political–economic ones can no longer be postponed.

The Christian Imperative to Transmit the Truth that Saves

H.E. Msgr. Marcelo Sánchez Sorondo

◗ *PASS Chancellor*

> *Fides principaliter est ex infusione; et quantum*
> *ad hoc per baptismum datur; sed quantum*
> *ad determinationem suam est ex auditu; et sic homo*
> *ad fidem per catechismum instruitur*
> In IV Sent., d. 4, q. 2, a. 2, sol. 3 ad 1, Moos, p. 175

The sacred duty of transmitting the doctrine that saves

We have come here to listen to one another: what could be kinder, nobler and more brotherly on our part; and what could be more desirable, more fortunate, more necessary in our world characterised by communication, especially in these pandemic times? Our first mission as Christians is to speak, to proclaim the message of Christ, to which we are witnesses and for whose teaching we are responsible. What can please a teacher more than to be surrounded by disciples and friends eager to hear his voice and learn his lesson? Dear friends and colleagues, let us consider ourselves, for a moment at least, all disciples of the one Master, Jesus Christ, and I would like to thank you for the pleasure of discussing this key topic together.

You must know that we Christians and academics, and those who are with us, Bishops, Priests, Teachers, and Parents, who have the duty of transmitting to others the doctrine of the faith and the Gospel – the truth that saves – feel great sorrow at seeing how little attention the people of our time pay to the word of the Gospel, how little they care about Christian education, so little, in fact, that at times we seem to be talking to the wind.

The turmoil of modern life so attracts and overwhelms the people of today, so impresses them, fills them with images, thoughts, passions, desires, pleasures and stresses that they do not have the time or even the means, it seems, to listen to the proclamation of Christ. And if they have ever heard of the Gospel at school, in church or on the web, especially now, during the pandemic, it is for them a subject so difficult, so disconnected, and apparently so useless that they often report more boredom than joy, and consider it strange, rather than a guiding light for their souls and lives.

The Grace of the Holy Spirit and the Magisterium of the Church

Dear friends and colleagues, this is the first obstacle to the Christian faith, which I wish above all to teach and spread. This is therefore what I am going to say to you in this short meeting as a reminder and a warning: faith needs a teacher. It requires teaching and studying. If a normal, sufficient relationship is not established between the teacher of faith and the disciple, faith is either not born or does not endure in the heart, soul and life of the disciple. *Fides ex auditu*, 'faith comes by hearing, and hearing by the word of Christ' – says the Apostle.[1] Religious education is indispensable; this principle is repeated many times and must be taken seriously.

And here it is good to remember the double meaning of the word "faith". It can indicate a subjective, inner religious feeling, that is, the attitude of the spirit to accept religious thoughts, principles and truths; and for us, this is the virtue of faith, which we initially receive through baptism. Secondly, faith can indicate religious doctrines, the content of faith, the articles of the 'Creed', for example. There is in fact a personal faith, 'believing', and there is an objective faith, 'believed'. St. Thomas says it well, with his usual incisive clarity: 'Faith comes chiefly from infusion, and in this regard is given by baptism; but as to its determination, it comes through hearing; and thus man is instructed for faith by catechism'.[2] Two very different factors contribute to faith. They operate differently, but both are necessary: the Holy Spirit, i.e. the action of the Holy Spirit in the soul, the action of grace with the infused virtues, among which is faith; and the magisterium authorised by Christ, and entrusted to the Apostles, the teachers of the faith – the Pope and the Bishops – as reaffirmed by the Second Vatican Council, and, as I said, to the teaching Church, which is echoed, as an inspired witness, by the entire People of God.[3] This is why St. Thomas insists and clarifies: '"Science" says more than "illumination". For it implies comprehension of those things toward which illumination directed one's vision; and therefore science pertains to perfection. Hence Dionysius calls the learned "perfected", and teachers "perfecters": and in

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[1] ἡ πίστις ἐξ ἀκοῆς, ἡ δὲ ἀκοὴ διὰ ῥήματος Χριστοῦ (*Rom.,* X:17).

[2] 'Fides principaliter est ex infusione; et quantum ad hoc per baptismum datur; sed quantum ad determinationem suam est ex auditu; et sic homo ad fidem per catechismum instruitur' (*In IV Sent.,* d. 4, q. 2, a. 2, sol. 3 ad 1, Moos, p. 175).

[3] cfr. *Lumen Gentium,* §§ 12; 25.

this way holy orders is established against ignorance, so that those ordained may be learned, and also the teachers of others'.[4]

It is easy to meet people who say they believe because they have some good spiritual feeling, or because they themselves (like other Christian denominations) search the Holy Scriptures for the Word of God. However, their often free and arbitrary personal interpretation, with different and contrasting meanings, is no longer the *una fides*,[5] the one faith desired by Christ and preached by the Apostles.

And it is unfortunately easy to meet learned people, always eager to profess their Catholic faith, who, while taking the indispensable magisterial function of the Church less into account, unwisely try to adapt the doctrines of the faith to the mentality of the modern world, not only with the praiseworthy effort to have these doctrines accepted and in some way understood, but also with reticence, alteration, and even denial of these same doctrines, according to the theories or tastes of current opinions. Faith is free in the act that expresses it; but it is not free in the formulation of the doctrine it expresses, when this has been authoritatively defined.

That is why I would like to take advantage of this meeting to repeat the recommendation that you have often heard from others: love the religious instruction of the Catholic Church, in its dogmas, in its liturgical expressions, in its books of authoritative teaching. We must not think we can have faith without adhering to the content of the faith, the 'Creed', the symbol of the faith (that is, the schematic synthesis of the truths of faith). We must not think we can revive religious life, or approach our faraway brothers and sisters, by minimising or distorting the precise teaching of the Church. Do not believe that docile adherence to such a teaching mortifies thought, paralyses research, closes off the paths of knowledge and Christian progress!

Inseparable link between the announcement of truths and the catechism

There is much talk today of the *Kérygma* (from the Greek Κήρυγμα), that is, the annunciation of the Gospel's truths that bring Christian salvation. We must be able to see the kinship between this proclamation and

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[4] 'Scientia plus dicit quam illuminationem [illuminatio]. Importat enim comprehensionem eorum ad quorum visionem illuminatio dirigebat; et ideo scientia ad perfectionem pertinet; unde Dionysius doctos perfectos nominat, et doctores perfectores: et sic contra ignorantiam ordo datur, ut scilicet ordinati sint docti, et etiam doctores aliorum' (*In IV Sent.,* d. 4, q. 2, a. 2, sol. 3 ad 2, Moos, p. 175).

[5] εἷς κύριος, μία πίστις, ἓν βάπτισμα: εἷς θεὸς καὶ πατὴρ πάντων (*Ephesians,* IV:5).

the catechism approved by Pope Benedict XVI, between divine revelation and the symbol of faith. We must be jealously and joyfully attached to this didactic and liturgical formulation of the Church's doctrine. In the Casina Pio IV, which for various reasons is very closely linked to the Bishop of Milan, I would like to repeat this message with the words that a Milanese Saint, Ambrose, an incomparable Bishop, Doctor and Pastor, pronounced like any good catechist when he was explaining the "Creed" to his neo-phytes: "We must take nothing away and add nothing. For this is the symbol which the Roman Church holds, where the first of the Apostles sat and where he transmitted the common thought".[6]

Online social media

With these premises in mind, I would now like to address the issue of social networks in general. We are in fact confronting critical challenges that threaten the future of the human family due to the astonishing development of technology in the information and communications media. Doubtless, the development of new technologies in the digital world provides great opportunities for everyone, especially for the new generations, for their human and religious education and for their personal growth. It allows for a wider sharing of knowledge, promotes economic development and offers new possibilities in a number of areas, including, in particular, health care at the time of the pandemic, and also for a new evangelisation. However, since the early 2000s, the increased reach of the internet, the dawn of Web 2.0 and the increasingly influential impact of social media, as well as the maturation of strategic uses of online platforms to influence audiences for economic, social, behavioural, religious and political purposes, have altered the discussion. In recent years, Pope Francis, some bishops, leading internet analysts, as well as the general public, have expressed growing concern that the content, tone and intent of online interactions have undergone an involution that generates a "culture of contempt" and threatens their human and Christian future. The events and debates that have unfolded over the past year highlight the struggles that lie ahead.

Thus, I want to analyse very briefly this *culture of contempt* that is being created by the internet, its causes and possible solutions, not only in the world at large but also in the Catholic world.

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[6] *Explanatio Symboli*, p. 10.

What is the culture of contempt?

We all have a certain experience with the web. If I may, I would like to give you an example from my experience. To be honest with you, often Catholics are some of the meanest people, and it doesn't depend on the ideological spectrum, since both the left and the right are responsible for this culture of contempt. I would first like to talk about my experience with the left when I gave an interview four years ago to *La Nación,* one of the most widely circulated newspapers in Argentina. The correspondent asked me about a certain Minister's critical statements about Pope Francis. I took the liberty of affirming that 'Pope Francis was Peter', and therefore a Catholic and a person who took daily communion such as the Minister should respect, venerate and love him as the vicar of Christ. The least they said about me (and my family) on the web was that I was a fascist, and other things that I do not have the courage to repeat. My point is that it was a bizarre overreaction and not just people disagreeing with me, but also people attacking me personally and anonymously with lies and fake news about my life. The Catholic right is not much better. I'll give you an example. On my way back from China, a Mexican journalist asked me about the outcome of the trip, which was to eradicate organ trafficking. In passing, I mentioned to him that I had the impression that the Chinese were following the Encyclical *Laudato Si'* better than other countries, also in terms of measures to curb climate change. Well, the right falsely accused me – and still do – of claiming that China is the best example of the application of the social doctrine of the Church.

I could give many more examples after many years in my position as Chancellor. Many people who deal with social media talk about a combat experience, meaning that reading what people say about you on social media such as Twitter almost causes post-traumatic stress.

But let us turn to more serious matters. Tragically, the use of digital technologies to organize, commission and engage remotely in child abuse, cutting across national borders, is outstripping the efforts and resources of the institutions and security agencies charged with combating such abuse; as a result, it becomes quite difficult to fight these horrific crimes effectively. The spread of images of abuse or exploitation of minors is increasing exponentially, involving ever more serious and violent forms of abuse and ever younger children. Most scientific studies highlight the profound impact of pornography on the mind and behaviour of children. It will surely have lifelong effects on them, in the form of grave addiction, violent behaviour and deeply troubled emotional and sexual relationships.

What can we say about the Gospel? Arguably, the power of the web extends to influencing not only ways of thinking, but also its content, or what people think. For many, the virtual world is the real world. Reality, for these people, is what the media recognises as reality; what the media does not recognise seems to be of little relevance. Thus, one often gets the impression that mainstream thought (*la pensée unique*) tends to silence those individuals and groups that the powers that control social media wish to ignore; and even the voice of the Gospel can be silenced in this way, although not entirely.

Where does this all stem from?

Let me make a few simple observations, first of all on the impersonality of the internet and the ease with which we can communicate through it. Before the internet, if you wanted to say something uncivil and odious publicly, you sat down and wrote a letter, found an envelope and a stamp and sent it to the editor of the paper. If your letter was published, people of common sense would say "that guy is crazy" and throw the paper in the trash. Now, none of that stands between your opinion and total publicity. Anyone can sit in their basement and write a comment, with no filter, no editor and no one to get in the way; such a comment immediately appears all over the world with the ease of the aforementioned communication and, moreover, the impersonality and anonymity of it. Often one cannot even know the name and identity of the person who has just fired off some crazy, malicious or just plain false comment, doing so perhaps under a pseudonym or a nickname of some kind. No doubt this has contributed – I think – to the intensity and virulence of these attacks that I have read about, called the fake spine phenomenon. Someone says: "I'm angry about this, I'm going to confront that person", so they feel very brave, they've done something brave and strong, but they haven't actually confronted the person, they haven't exposed their name, they haven't opened themselves up to criticism, they've just thrown out a comment anonymously: that's not a spine, that's a fake spine.

Manipulation by the so-called strong powers

Many people think that behind this culture of contempt there is also a kind of manipulation by the so-called strong powers. Companies and governments are becoming increasingly aware that they can influence people's opinions in this way. And these entities certainly know how to circumvent

any existing protections. The Russian troll armies are a good example of something that will become increasingly common in the future.

Another observation is the way these machines are designed. Think, for example, of the smartphones we all carry. Their email and other notifications, the dings and pings when a message arrives, were designed to be addictive, that is, to trigger a sort of chemical reaction in the brain: look, I have got a reply, or somebody liked what I posted. It is clear, as evidenced by the social media designers in the Netflix documentary *The Social Dilemma*, that these machines are programmed to be addictive. Also, we are all familiar with the so-called algorithms, these impersonal formulas by which we are manipulated to look at things from a certain point of view. For example, the algorithms can determine what you like on the basis of the websites you visit and they can direct you to more of the same kind of content. The result of this manipulation is economic gain, which is for the sake of money. They get our eyes on the screen so that advertising money flows in the right places. In reality, what it is doing with us is locking us into these websites with a hidden persuasion that directs us almost unconsciously.

The sex abuse scandals

There is something else here, and I say this to our shame: the sex abuse scandals that have rocked us in recent decades have certainly contributed to the intensity, the violence and the suspicion that can be found on social media. Such suspicion about the institutional Church is especially in the Anglo-Saxon and German world and to some extent I understand it. The suspicion of the pre-understanding that authority covers crime has exacerbated many of these tensions, leading to trigger-happy reactions and a media presence where scandalous reporting about the Church always prevails.

And with regard to our specific obligation to communicate the 'word that saves' according to the truth expressed in the Catechism, the last reason why it is difficult to sow in the soil of the culture of contempt is, frankly, the presence of some unprepared and uncivilized people, as St. Thomas points out. More to the point, there are some pretty nasty people on social media and especially on Catholic social media. These people instead of evangelising with the Gospel and proper training, often empower themselves by stirring up hatred, and not really educating or enlightening, but drawing their power from conflict, stirring up trouble and verbal violence, putting everything negative on the table. Obviously, this has contributed greatly to the current situation.

A change of mentality and pastoral renewal

The question that I ask myself is the following. What can the Church do in this throwaway culture of contempt to use social networks to help spread the Gospel and religious values, to promote the dialogue desired by Pope Francis, the interreligious and intercultural encounter, as well as to defend those essential principles to build a society based on dignity of the human person and fraternity, attentive to the common good, social justice and the safeguarding of the planet? The Church and all of us who belong to it are obliged to spread the Gospel and the Apostolic Creed, the truth and the grace of Christ who saves, in response to the Lord's command: "Go to the whole world and proclaim the Gospel to every creature".[7]

It is certainly not an easy mission in an age like ours, which is convinced that the time of Christian certainties has irremediably passed. Mainstream thought believes that humanity must live in a world governed by the absence of transcendent meaning, trusting only in itself and in science, in an intra-worldly, provisional and fleeting horizon. In this context, the media can serve "to proclaim the Gospel or to reduce it to silence in people's hearts".[8] This poses a serious challenge for believers, especially for parents, families and all those responsible for the education of children and young people. Those in the ecclesial community who are particularly gifted to work in the media should be encouraged with prudence and pastoral wisdom to become professionals capable of entering into dialogue with the vast world of communication networks.

What is the way forward for all of us who are social media users, but are also members and lovers of the Catholic Church? What is the way forward for those of us who want to participate in the community and, at the same time, fulfil the imperative of evangelism? How can those of us who want to engage in teaching and use social media not fall into its traps?

Practicing moderation and discipline in the use of the web

Let me make a couple of practical suggestions. Firstly, I would recommend fasting from social media from time to time. Even though it is difficult to do without social media – and we have a service to perform on it – we should be careful and mindful of the time we spend on it. Many

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[7] καὶ εἶπεν αὐτοῖς Πορευθέντες εἰς τὸν κόσμον ἅπαντα κηρύξατε τὸ εὐαγγέλιον πάσῃ τῇ κτίσει (*Mark,* XVI:15).

[8] Cfr. Pontifical Council for Social Communications, Pastoral Instruction *Aetatis Novae* (February 22, 1992), § 4; AAS 84 (1992), 450.

researchers have shown the close correlation between screen time and depression. Let us apply the traditional practices of fasting and abstinence to social networking, following the indication of the *Catechism of the Catholic Church*: 'One should practice moderation and discipline in the use of the social communications media'.[9]

The distinction between fighting and arguing

The second recommendation that we should keep in mind is the distinction between fighting and arguing. Here we can draw inspiration from St. Thomas' way of reasoning not only in his systematic works but also in his polemical writings, and from Pope Francis' notion of dialogue. There is a clear distinction between discussion, dialogue and quarrelling. Fighting is falling into animosity, mutual dislike, ad hominem attacks, aggression, personal remarks, contempt for the other. We must recover the importance of argument, of arguing, which means observing ideas correctly, suggesting hypotheses, thinking clearly and logically, drawing conclusions, reasonably admitting when we do not know something, accepting criticism with elegance. We must recover for the web the method of disputed questions that St. Thomas has left us. I remember Paul Ricœur telling me shortly before he died, 'I miss the debate of my generation in France, there is no more discussion in the media, positions are taken as a starting point and there are only monologues and no dialogue'. If you like dialogue use the internet all you want. If you are monologuing or complaining, forget it. I have long agreed with the Spanish philosopher Julian Marías, who said that the great need of our time was to relearn how to have a dialogue about the Gospel in public. Between violence and soft tolerance lies the space for the argumentation of dialogue. Thomas Aquinas lived in that space: recovering it is really important to move forward.

The moral significance of calumny

Another piece of advice: we must reclaim the moral significance of calumny. I know it is a word that might seem a little outdated, but it actually indicates something that − I think − is of real importance in our internet age. For Aquinas, truthfulness is the virtue attached to justice, which inclines us to truthfully manifest the knowledge we possess.[10] Without truthfulness,

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[9] Cfr. § 2512.
[10] 'Truth can be taken in two ways. First, for that by reason of which a thing is said to be true, and thus truth is not a virtue, but the object or end of a virtue: because,

the preservation of society is impossible: 'Since man is a social animal, one man naturally owes another whatever is necessary for the preservation of human society. Now it would be impossible for men to live together, unless they believed one another, as declaring the truth one to another. Hence the virtue of truth does, in a manner, regard something as being due'.[11] It can therefore be said that the most important of the virtues attached to justice is truthfulness, the practice of which consists in conforming our inner thoughts to our words and outward behaviour. The term veracity means truthfulness, sincerity, openness, transparency, avoiding duplicity, simulation and hypocrisy. If truth builds society, lies in all their forms destroy it. A statement that is contrary to the truth acquires particular gravity when it is uttered publicly, because it undermines human coexistence. Calumny means damaging the reputation of others by statements or judgements that are contrary to the truth. The *Catechism of the Catholic Church* condemns calumny, in the context of the presentation on the eighth commandment: "You shall not bear false witness against your neighbour". It may not be the commandment that comes to mind, but I think commandment number eight is really important today, especially in social networks. Here is the key quote from the *Catechism* 'when made publicly, a statement contrary to the truth acquires a particular gravity'.[12] Again, when you write on the internet, remember that you are spreading all over the world something you know – or suspect – to be false about someone. You are spreading slander, calumny, which 'destroy the reputation and honour of one's neighbour'.[13] You are destroying someone's reputation by bearing false witness against your neighbour in a very serious way. You are committing a grave sin against the love of your neighbour[14] and destroying social coexistence. I really appreciate how much Pope Francis insists on the destructiveness of calumny,

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taken in this way, truth is not a habit, which is the genus containing virtue, but a certain equality between the understanding or sign and the thing understood or signified, or again between a thing and its rule, as stated in the First Part (q. 16, a. 1; q. 21, a. 2). Second, *truth may stand for that by which a person says what is true, in which sense one is said to be truthful. This truth or truthfulness must needs be a virtue, because to say what is true is a good act*: and virtue is that which makes its possessor good, and renders his action good' (*S. Th.*, II–II, q. 109, a. 1 c.).

[11] *S. Th.*, II–II, q. 109, a. 3 ad 1.

[12] Cfr. § 2476.

[13] *Catechism of the Catholic Church*, § 2479.

[14] 'If, however, the false signification be about something the knowledge of which affects a man's good, for instance if it pertain to the perfection of science or to moral conduct, a lie of this description inflicts an injury on one's neighbour, since it causes

especially in his homilies at Mass in Santa Marta. In one of them he talks about the dark joy of gossip. There is a kind of joy in gossip and slander, but it is a dark and demonic joy. It is a dysfunctional joy that will eventually turn against us and become something akin to depression. Recall the dictum of Kierkegaard, the great Danish philosopher: "when I am labelled I am denied". It is true, now you can join a crowd on Twitter and attack someone because they have said something that is not what you think. It is true that when I am attacked I am denied my dignity as a person.

The decisive importance of the virtue of studiousness (*studiositate*)

Let me make another recommendation: the importance of preparation is always necessary, but particularly so when we go online to teach the Gospel. Let us remember in this regard what St. Thomas says about the 'faith that comes by hearing' (*fides ex audito*): 'Faith comes chiefly from infusion, and in this regard is given by baptism; *but as to its determination, it comes through hearing; and thus man is instructed for faith by catechism*'.[15] It is true that Christ promises the gift of wisdom, 'for it will be given you in that hour what to speak', and even the author of the gift, 'for it is not you who speak, but the Spirit of your Father who speaks in you'. So 'take no thought'[16] about this. Thus it seems to exclude two things, both with regard to what is said, and with regard to the manner of speaking. The first pertains to wisdom, the second to eloquence or elegance. But what the Apostle Peter says in his first letter seems contrary to this: 'always be ready to give an answer to everyone who asks you a reason concerning the hope that is in you'.[17] St. John Chrysostom resolves it, saying that when someone has the need to respond, and has the time to deliberate, prepare and study, he should not expect divine help alone; when the apostles were afflicted, they did not have time, which is why they could only entrust themselves to the Son of God. Therefore, when someone has the ability, he should do what he can to prepare himself; but certainly, if he does not have time, he should entrust himself to the Son of God, but what he should never do is

him to have a false opinion, wherefore it is contrary to charity, as regards the love of our neighbour, and consequently is a mortal sin' (*S. Th.*, II–II, q. 110, a. 4 c.).

[15] 'Fides principaliter est ex infusione; et quantum ad hoc per baptismum datur; sed quantum ad determinationem suam est ex auditu; et sic homo ad fidem per catechismum instruitur' (*In IV Sent.*, d. 4, q. 2, a. 2, sol. 3 ad 1, Moos, p. 175).

[16] *Matthew,* X:19–20.

[17] ἕτοιμοι ἀεὶ πρὸς ἀπολογίαν παντὶ τῷ αἰτοῦντι ὑμᾶς λόγον περὶ τῆς ἐν ὑμῖν ἐλπίδος, ἀλλὰ μετὰ πραΰτητος καὶ φόβου (*I Peter,* III:15).

to tempt God if he has time to think, study and prepare himself. For this reason Christ did not say only, 'take no thought', but he sayd, 'when they will deliver you up, take no thought'. This is why St. Thomas considers studiousness (*studiositate*) to be an important virtue whose 'merit consists in stimulating us with vehemence to participate in the knowledge of things, and this is what gives it its name, since the desire to know refers, essentially, to knowledge, to which studiousness is ordered'.[18] But since learning involves a lot of work, the very trouble of learning is part of virtue, insofar as it removes the obstacles that stand in the way of knowledge.[19] Thus, the 'strenuous toil of the concept [conceptualization]' (*Anstrengungen des Begriffs*) of which Hegel speaks in the Preface to *The Phenomenology of Mind,* is advisable and necessary for evangelisation on the web. This conceptual effort of studiousness stands for innovation and creativity and is the opposite of laziness, repetitiveness, superficiality and lightness with which even many Catholics on the web generally present themselves when speaking about the evangelical word.

Prayer must precede and accompany all our internet use

Here is one last recommendation for the way forward. Prayer must precede and accompany all our internet use. I know that when one talks about prayer it may sound pious and unrelated to the web. I don't mean this as a pious comment. I mean that this is the most important observation I have made and that is why I put it at the end. Intense prayer must be added to the effort of study and work. *Ora et labora* is the motto of St. Benedict on which Europe was built. We must follow St. Benedict when we use the net. Pray when you sit down at the keyboard. Pray before you go online. In this pandemic time in which we are forced to distance ourselves from personal contacts, an elderly and saintly nun (Sister Eugenia Bonetti) told me that for her the net was like her personal tabernacle. If social media is not connected to God and the things of God, its use will probably end badly.

With prayer we ask the Holy Spirit to give us his holy gifts and to put the virtues into practice in order to use the net with Christ's programme of the beatitudes. The gift of fear and the virtue of temperance make us truly "poor in spirit", poor in self-centred pride in our own greatness and

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[18] 'laus huius virtutis consistit in quadam vehementia intentionis ad scientiam rerum percipiendam, et ex hoc nominatur. Nam appetitus cognoscendi per se respicit cognitionem, ad quam ordinatur studiositas' (*S. Th.*, II–II, q. 166, a. 2 ad 3).

[19] Loc. cit.

the desire for earthly goods,[20] and thus capable of generosity and solidarity with our brothers and sisters; they obtain for us the kingdom of God, with its greatness and fullness, already now.[21] Through the gift of mercy and the virtue of justice, we exercise true "gentleness and tenderness", by which we sympathise with the misery of others and live in peace with one another,[22] thus deserving to possess the earth and our working environment in peace.[23] Through the gift of knowledge and the virtue of prudence we acquire the holy "sadness and weeping",[24] recognising the importance of accompanying our neighbour especially in his pain, or the nothingness of the goods of the earth, or finally the vanity of human means; thus we can

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[20] "[Divitiae] aliqui nec habent, nec affectant, et istud securius est, quia mens trahitur a spiritualibus ex divitiis: et isti dicuntur proprie pauperes spiritu, quia actus donorum, qui sunt supra humanum modum, sunt hominis beati: et *quod homo omnes divitias abiiciat, ut nec aliquo etiam modo appetat, hoc est supra humanum modum*" (*In Mat.*, c.V, v. 3, lect. 2, ed. cit., p. 67 a, n° 416).

[21] "[Pauperes spiritu] autem repromittitur regnum caelorum, in quo notatur non solum altitudo honoris, sed *affluentia divitiarum*; *Iac.* II, 5: 'nonne Deus eligit pauperes in hoc mundo, divites in fide?' Et nota quod Moyses primo promisit divitias; *Deut.* XXVIII, 1: 'faciet te dominus Deus tuus excelsiorem cunctis gentibus, quae versantur in terra'; et infra: 'benedictus tu in civitate, et benedictus in agro'. Et ideo *ut distinguat dominus legem veterem a nova, primo ponit beatitudinem in contemptu divitiarum temporalium. Item, secundum Augustinum nota, quod ista beatitudo pertinet ad donum timoris: quia timor, maxime filialis, facit habere reverentiam ad Deum; et ex hoc contemnit homo divitias*" (*Loc. cit.*).

[22] "[Pietas] etiam ex consequenti subvenit in miseria constitutis. Et quamvis iste actus non habeat locum in patria, praecipue post diem iudicii, habebit tamen locum praecipuus actus eius, qui est revereri Deum affectu filiali, quod praecipue tunc erit, secundum illud *Sap.* V, 5 'ecce quomodo computati sunt inter filios Dei'. Erit etiam mutua honoratio sanctorum ad invicem. Nunc autem, ante diem iudicii, miserentur sancti etiam eorum qui in statu huius miseriae vivunt" (*S. Th.*, II–II, q. 121, a. 1 ad 2).

[23] "Chrysostomus dicit: 'inter multas promissiones aeternas ponit unam terrenam'. Unde, ad litteram, *terram istam possident mites. Multi enim litigant, ut possessiones acquirant, sed frequenter vitam et omnia perdunt; sed frequenter mansueti totum habent*; Ps. XXXVI, 11: mansueti haereditabunt terram" (*In Matth. Ev.*, c.V, v. 4, lect 2, ed. R. Cai, Marietti, Taurini – Romae, 1951, p. 67 b, n° 420).

[24] "Ista beatitudo appropriatur dono scientiae, quia *illi lugent qui miserias aliorum cognoscunt*: unde de quibusdam talem scientiam non habentibus dicitur *Sap.* XIV, 22: 'in magno viventes inscientiae bello, et tot et tam magna mala pacem appellant'; e converso *Eccle.* I, 18: 'qui addit scientiam, addit et laborem' " (*In Matth. Ev.*, c.V, v. 5, lect. 2, ed. cit., p. 68 b, n° 424). Also: "Dono autem scientiae respondet quidem primo luctus de praeteritis erratis; et consequenter consolatio, dum homo per rectum iudicium scientiae creaturas ordinat in bonum divinum. Et ideo in hac beatitudine ponitur luctus pro merito, et consolatio consequens pro praemio. Quae quidem inchoatur in hac vita, perficitur autem in futura" (*S. Th.*, II–II, q. 9, a. 4 ad 1).

seek and find in God and in the healing of our brothers and sisters our consolation and our peace.[25] The gift of fortitude creates in us an ever-increasing "hunger and thirst for righteousness", which must characterise the Christian above all: just as in early Greece those who studied were called 'sophi', i.e. wise men, and Pythagoras did not want to be called wise, but a philosopher, i.e. a lover of wisdom, so Jesus Christ wanted his own to be and to be called "lovers of righteousness".[26] One day such lovers of righteousness will be satisfied by God with all the good things of heaven, but even now they are satisfied with spiritual goods or by quenching the false satiety of the transitory goods characteristic of the unrighteous.[27]

The gift of counsel urges us above all to exercise "mercy" towards the double human misery, whether of temporal or spiritual realities of our neighbour, in order to obtain mercy before God.[28] And while this gift exercises the direction of virtuous acts, it exercises such direction especially in the "works of mercy".[29] Divine mercy begins for our good already in the present life: first of all with the relief of forgiveness of sins, but also by removing temporal defects. However, it will be complete in the future

[25] "Quando enim aliquis dolet de amissione rei dilectae, consolationem recipit si aliam rem magis dilectam acquirit. Unde homines consolantur, quando pro temporalibus rebus recipiunt spirituales et aeternas, quod est spiritum sanctum recipere; quare dicitur Paraclitus *Io.* XV, 26. Per spiritum sanctum enim, qui est amor divinus, homines gaudebunt; *Io.* XVI, 20: 'tristitia vestra convertetur in gaudium'" (*In Matth. Ev.*, c. V, v. 5, lect. 2, ed. cit., p. 68 a, nº 423).

[26] "Tempore enim Pythagorae illi qui studebant, vocabantur sophi, idest sapientes; Pythagoras autem noluit vocari sophos, idest sapiens, sed philosophus, hoc est sapientiae amator: ita vult dominus quod sui sint, et vocentur amatores iustitiae" (*In Matth. Ev.*, c. V, v. 6, lect. 2, ed. cit., p. 68 b y 69 a, nº 427).

[27] "Conveniens praemium ponitur, et primum in aeterna visione, videbunt enim Deum per essentiam [...]; secundo in praesenti. Et haec est duplex. Una est in bonis spiritualibus, hoc est in impletione mandatorum Dei; *Io.* IV, 34: 'meus cibus est ut faciam voluntatem eius qui misit me, ut perficiam opus eius': et de isto exponit Augustinus. Alio modo accipitur de saturitate rerum temporalium. Homines iniusti numquam saturantur, sed homines qui habent terminum suum ipsam iustitiam, ultra non procedunt" (*In Matth. Ev.*, c. V, v. 6, lect. 2, ed. cit., p. 69 a, nº 428).

[28] St. Thomas affirms that this beatitude follows the previous one because Jesus Christ intended to unite mercy and justice: "quia iustitia sine misericordia crudelitas est, misericordia sine iustitia mater est dissolutionis" (*In Matth. Ev.*, c. V, v. 6, lect. 2, ed. cit., p, 69 a, nº 429).

[29] "Etsi consilium dirigat in omnibus actibus virtutum, specialiter tamen dirigit in operibus misericordiae" (*S. Th.*, II-II, q. 52, a. 4 ad 1).

when all misery, guilt and sorrow will be removed. This is why the virtue of hope is enhanced and affirmed by the gift of counsel.

Through the gift of understanding and the virtue of faith, we open our hearts to the divine light, and our hearts are purified more and more from attachment to sensible objects; thus we acquire the "purity of heart" which will make us worthy to contemplate God face to face one day. It is a natural desire for people, seeing the effects, to inquire into the cause. Thus the admiration of the lovers of truth gave birth to philosophy, but such a desire will not be stilled until it reaches the first cause, which is God, that is, until we see God in his essence.[30] However, in this life "purity of heart", the moral virtues, and above all chastity, help towards the contemplation of God and the exercise of works of charity: the saints whose hearts are full of justice and charity see in a more excellent way than those who see through bodily effects, for the more the effects are close to God, the more He is known through them.[31]

Finally, through the gift of wisdom and the virtue of charity we tend towards the most intimate union with God and with our neighbour, in the possession of the supreme good, in which is contained the "peace" that makes us full children of God and participants in the divine nature.

The "fruits of the Holy Spirit"

According to the teaching of St. Thomas, already in this life and in our activities we will partially enjoy these beatitudes, which the solicitous exercise of the gifts of the Holy Spirit, the individual and social virtues and the works of mercy promise us fully for the next life.

In St. Thomas' view, this is why the Apostle speaks of the "fruits of the Holy Spirit", whose sweetness and gentleness we can already taste in this life and in our activity, and not of flowers which only bloom at harvest time and whose fruit can only be gathered later. For it is one thing to hope

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[30] "Naturale autem desiderium est, quod homo videns effectus inquirat de causa: unde etiam admiratio philosophorum fuit origo philosophiae, quia videntes effectus admirabantur, et quaerebant causam. Istud ergo desiderium non quietabitur, donec perveniat ad primam causam, quae Deus est, scilicet ad ipsam divinam essentiam. Videbitur ergo per essentiam" (*In Matth. Ev.*, c. V, v. 8, lect. 2, ed. cit., p. 70 a, nº 434).

[31] "Sancti enim qui habent cor repletum iustitia, vident excellentius quam alii qui vident per effectus corporales: *quanto enim effectus sunt propinquiores, tanto Deus magis cognoscitur per illos. Unde sancti qui habent iustitiam, caritatem, et huiusmodi effectus, qui sunt simillimi Deo, cognoscunt magis quam alii*" (*In Matth. Ev.*, c. V, v. 8, lect. 3, ed. cit., p. 70 b, nº 435).

that the tree will bear fruit, when the leaves begin to appear, and another, when we see the first signs of the fruit.[32]

So, what are the "fruits of the Holy Spirit"? They are the signs that the Holy Spirit with his holy gifts is present and at work in you or someone else. What are they? Put these in your mind and next to your computer screen: "love, joy, peace, patience, kindness, goodness, generosity, faithfulness, gentleness and self-control".[33] Now, if you visit a website, even a Catholic website: do you see someone who is exhibiting these qualities? Can you look at that person and say yes, I am feeling love, joy, peace, patience, kindness, goodness, faithfulness, gentleness, self-control? Well if you find one or more people with these qualities it means that the Holy Spirit is present and operative, because 'by their fruits you will know them'.[34] This is not a conjecture or a biological science where you need special tests to discover the presence of a virus. In reality the fruits of the Spirit are seen and felt in these qualities.

The "works of the flesh"

Now, in that same fifth chapter of *Galatians*, Paul sets forth what he calls "the works of the flesh", that is, those actions or attitudes which arise with the lack of prayer and which are contrary to the Spirit or, rather, those works which, through lack of elevation to God, indicate that dark spirits are at work: enmities, strife, jealousy, anger, quarrels, contentions, dissensions and factions. Let me quote Paul: 'the works of the flesh are obvious, which are: adultery, sexual immorality, uncleanness, lustfulness, idolatry, sorcery, hatred, strife, jealousies, outbursts of anger, rivalries, divisions, heresies, murders, drunkenness, orgies, and things like these'.[35] These are the marks of the dark spirit, these are the works of the flesh. Now go into any setting, go on the internet, especially the Catholic internet and tell me if you see these "works of the flesh", these 'un-qualities' in someone. I would

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[32] "Aliter enim habetur spes fructificationis arboris cum virescit frondibus, et aliter cum iam primordia fructuum incipiunt apparere" (*S. Th.*, I-II, q. 69, a. 2 c.).

[33] ὁ δὲ καρπὸς τοῦ πνεύματός ἐστιν ἀγάπη, χαρά, εἰρήνη, μακροθυμία, χρηστότης, ἀγαθωσύνη, πίστις, πραΰτης, ἐγκράτεια, i.e. 'fructus autem Spiritus est caritas, gaudium, pax, longanimitas, bonitas, benignitas, fides, modestia, continentia' (*Galatians,* 5:22 f.)

[34] ἕκαστον γὰρ δένδρον ἐκ τοῦ ἰδίου καρποῦ γινώσκεται (*Luke,* 6:43).

[35] φανερὰ δέ ἐστιν τὰ ἔργα τῆς σαρκός, ἅτινά ἐστιν πορνεία, ἀκαθαρσία, ἀσέλγεια, εἰδωλολατρία, φαρμακία, ἔχθραι, ἔρις, ζῆλος, θυμοί, ἐριθίαι, διχοστασίαι, αἱρέσεις, φθόνοι, μέθαι, κῶμοι, καὶ τὰ ὅμοια τούτοις (*Galatians,* 5:19-21).

recommend that you stay away from that person. I strongly suggest that you are dealing with a manifestation of the dark spirit.

With prayer, you can judge every scenario, including the internet, according to these behaviours, according to the "fruits of the spirit" or the "works of the flesh". It will help you make a decision about what you should see and do. Keep in mind also that while the fruits of the spirit are gifts of the Holy Spirit, the works of the flesh have a very different principle. The devil has two big names in the New Testament. He is called διά-βολος (in Greek meaning 'the one who divides') which means the scatterer and Σατανᾶς (Satanâs) which means the accuser. The devil is someone who does everything in his power to separate us from the vertical link uniting true believers with God, and which alone saves them from solitude and death. These movements of the dark spirit divide, accuse, isolate and kill. If you see a website that is doing a lot of dividing, accusing and killing, I think you know which spirits are behind it. These works of the flesh, as described by St. Paul in his *Letter to the Galatians*, might seem a rhetorical exaggeration but when we see the attacks on children's dignity happening in the dark web – as Pope Francis denounced it in our Summit on Child Dignity –,[36] we reach the conclusion that there is nothing rhetorical about them and that they have no other principle but the "prince of this world".[37]

Motives for hope

I just want to conclude by showing signs of hope. I would like to assume that PAS and PASS are known as some of the most enthusiastic users of social media such as Twitter, websites, webinars, etc. in the Catholic space or at least in the Holy See. Personally, I firmly believe in the evangelical efficacy of the web, and this first specific meeting on this subject also serves to plan subsequent ones to study ever more adequately the great theme of communication in our time. It is a positive sign of hope that is encouraging the Pope, Bishops and priests more and more to get involved in social media, because they are aware of its enormous evangelical potential not only for sharing information, but for the proclamation of the Gospel. Witnessing the Pope's presence on the internet with his Masses, homilies and ceremonies during the pandemic, we can only confirm the idea that

[36] Address of His Holiness Pope Francis to Participants in the Congress on "Child Dignity In The Digital World", available online http://www.pass.va/content/scienzesociali/en/magisterium/francis/14november2019.html

[37] ὁ τοῦ κόσμου ἄρχων (*John,* XIV:30).

social media is decisive for the communication of the Gospel in the new global world. Do not interpret anything written here as a one-sided rejection of social media. We are betting on the web and we are playing in its favour, but we want to do so with studiousness and a critical spirit that brings to the table how dysfunctional it can be if it is not used rationally, virtuously and prayerfully. We would like to use the net, but with caution, with 'discernment of spirits', seeking the good of our neighbour and the common good, making sure that the word of the Gospel is heard without misrepresentation. As St. Thomas says in the text that has inspired these lines, Christian faith derives principally from the infusion of grace and its teaching *ex audito*.[38] Pope Francis did both of these things online during the Easter Sunday Mass 2021 and the final blessing *Urbe et Orbe* streamed live and on TV. Regarding the former, I am very happy to know that perhaps for the first time Francis has given "the grace and counsel of the Holy Spirit" – as part of the text of the blessing says – to the whole audience willing to receive it. And with regard to the teaching of the faith, the Pope has explained the central theme of our creed and catechesis, which is the Resurrection of Christ. The grace of Christ and the word of the Gospel is communicated on the web by the successor of Peter: what greater sign of hope can we ask for! It is a clear, premonitory message that announces a new mode of evangelisation with the grace offered and the word heard through the web.

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[38] Cfr. *In IV Sent.*, d. 4, q. 2, a. 2, sol. 3 ad 1, Moos, p. 175.

Between Truth, Legitimacy, and Legality in the Post-Truth Era

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The starting point for the following considerations is the strong feeling that today we are not faced with some *accidental and transitory* "pathologies" of communication (such as fake news, infodemic…) but with some communication patterns which are part of a new, discursive regime (in the Foucauldian sense) that has changed in depth and that must be studied in its systemic aspects. We are facing a profound epistemic change, not a moment of confusion; more specifically, the change – which I have called epistemic – has to do with the technological, and consequently informational and ontological changes that all the great 'industrial' revolutions entail. It happened in the past centuries too; in short, nothing strange.

In order to argue about the characteristics of these changes, first of all I will try to outline the old categories that are no longer suitable for the new regime; then, I will outline two new models which, in my opinion, are becoming widespread and are more adequate to the "new" reality; finally, I will suggest a sort of alternative criterion of truth instead of our traditional and beloved one.

1. New criteria for our sense of truth and reality

When I speak in terms of "regime" I mean that our new tools of communication (evidently, the digital ones) are not just instruments which allow us to transmit content. As already De Kerckhove said in *The Skin of Culture* (1995, p. 246) *media change reality*: "reality is technology-dependent, it changes every time new technologies invade it. A worldview based on print is challenged and weakened by the appearance of TV, just as a worldview based on TV is deeply threatened by computer networks. Reality is a form of consensus supported not only by the goodwill and the language of the communities that share it, but also framed and maintained by the principal medium of communication used by that culture".

But, moreover, *media define the criteria of reality*: they contribute to the creation of a sphere (that is mediatic and empirical, as is the world of social networks, or the world of Google Maps) with its own logic, its own

criteria for legitimation, its own standards, and its own rules. These rules define what is possible, what is legitimate, what can be considered true in our world. According to Foucault, it is both a problem of truth and of power management. This is why, in my view, the problem of post-truth (as it often happens today) is not merely a problem of communication, of mediatic poisoning. The problem is deep, and it has to do with the criterion of truth and where the authorization to set all of the abovementioned criteria comes from.

In *Discipline and Punish* (1975), but also in another very interesting text on this subject (the interview on "The Political Function of the Intellectual", 1976, pp. 12-14), Foucault clarifies that each society has its regime of truth, focusing on:

1. "The types of discourse [society] harbors and causes to function as true";
2. "The mechanisms and instances which enable one to distinguish true from false statements" and
3. "The way in which each is sanctioned";
4. "The techniques and procedures which are valorized for obtaining truth";
5. "The status of those who are charged with saying what counts as true".

"Truth" is "a system of ordered procedures for the production, regulation, distribution, circulation and functioning of statements". And this belief should be the frame of our thoughts on communication today.

If we pay attention to the criteria of *truth production and regulation* today, we see that some certain central categories of modernity have entered into crisis and seem to be inadequate: that of truth as correspondence, that of truth as verification, and that of truth as sincerity.

2. Some old ideas to overcome

The idea of correspondence entails a dimension of accessible and observable factuality that is independent of us. On the one hand there is reality, on the other the discourses on reality, and the more these two elements correspond, they will be superimposable, the more the discourse will be true, and the reality will be manifest.

In my opinion, the point is not if this "objective" level of reality exists or not. I can even assume that it exists. Instead, the points that need to be investigated are what I mean with "reality" (even if I think that a level of reality exists) and how I can access to it, in order to shape an adequate discourse.

About reality, I think that, thanks to a slow evolution of traditional media and textual media genres, this category has profoundly changed.

Thanks primarily to traditional media, the category of reality that we use today (I mean: what seems normal for us to consider reality) is much more complex and much more hybrid (see Lorusso 2018).

On the one hand, the mix that TV has been carrying out between different genres since the 1980s (information, entertainment, real politics...) has confused different criteria of reality: what is real in a living room is not real in the same sense as in a scientific laboratory. Today we use adjectives like real, true, objective, authentic, as if they were synonyms. However, the synonymy, or at least the overlapping, between these terms is only the *effect* of a certain evolution of media. This evolution (of which television has been the protagonist) has first accustomed us to consider that what really happens is real. However, is what happens in a reality show real in the same sense in which what happens in our daily lives is real? Then, it has accustomed us to think that what happens is authentic and therefore reliable, trustworthy. However, is everything that is authentic also reliable on an epistemic level? If I have an adverse reaction to a drug, can my authentic experience be a reliable point of reference for everyone?

In short, many levels have been confused: the ontological level (what is real), the perceptual–experiential level (what can be experienced), the epistemic level (what is true), and the ethical level (what is regulatory).

On the other hand, we have become more and more accustomed to putting different enunciations on the same level (so in a reality show, *through* a reality show, a public figure can speak – on a different level – to his electorate, or can build his electorate). Think of the extraordinary case of the president elect in Ukraine, Volodymyr Zelenskyy, protagonist of the fiction *Servant of the People*: a case where a person with no political experience, but a political identity built at the level of fiction (fiction in which he embodies an ordinary man who becomes President of Ukraine), becomes President of Ukraine in an almost plebiscitary way. The reality that repeats fiction. The reality that is *as* the fiction, blending with it.

Thus, we have gradually changed the criteria of reality: reality does not have to do with what is given, what happens, the level of events, but it can be prepared, scripted, arranged (like a speech, but remaining reality).

If it is clear that our category of reality has changed, there is one more problem: the one of accessibility. Nowadays, we deal with an apparent widespread accessibility: with a satellite view we can see a road in a country very far from ours, Canada; with a little research, we can access, from

our desk, a manuscript which is deposited at the French National Library; we can see (and I'm not using the term "see" by chance) at a great distance what happens inside a body, an organ, and maybe lead a surgery... Everything seems accessible to so many people, but what we actually access is another "mediation" of reality (a visual shot, within a discursive frame, through and thanks to a given mediatic tool). This generalized accessibility makes everything just *hyper-mediated*.

In spite of the widespread idea of disintermediation of information (justified by the fact that communication is no longer one to many but many to many, with direct access and direct possibility of taking the floor), I believe we should go back to focusing on how many other new mediations have been added to our being in the world. Generalised accessibility is made possible by a multiplication of mediations.

Thus, the most interesting aspect of what happens today, even when faced with a "very simple" descriptive statement (i.e., "there was an accident along my route an hour ago"), is not to verify whether the statement corresponds to an event that actually happened, but to ascertain whether or not *to trust it*, because the levels of mediation and distancing from reality have multiplied: who made the statement? Which source does this information come from (is it Google Maps providing me with traffic updates or am I hearing it from a friend who lives there)?

Obviously, we could say that all these questions have something to do, in some way, with the correspondence of the statements to facts, but the point refers more to the "nature" of the sentence, its reason, its origin, its truthfulness.

And *truthfulness* is a weaker notion than truth; it is something that has to do with accuracy, honesty, credibility – subjective components of interpretative accounts.

I believe that this "extreme" accessibility is a noteworthy communicative feature of our time. And judging the truth of these pieces of "reality" using particular correspondence criteria is simply inadequate, empirically impossible and, I would add, rather uninteresting: the interesting part is precisely the stratification (or mediation) that immediately shapes the initial information or data.

Indeed, it is within these layers that the judgment of truth becomes complex, and we shift from truth (a matter of presumptive objectivity) to truthfulness (a matter of negotiable interpretation): the many versions of the facts progressively multiply and all we can do is retrace their paths of formation (as well as the reasons for these paths and the empirical elements

they involve), but we cannot verify their "correspondence" to reality. Reality is in and through those interpretative layers.

In light of this acceleration and over-production of "reality mediations", the idea of verification and proof (which I have mentioned before) also seems to lose its place on any genuine path of discovery.

Verification today seems neither a matter of correspondence (because of the reasons we have just explained) nor one of genuine argumentative assessment, genuine comparison or in-depth procedures. I am not generically stating that people today are superficial. I'm saying that today the informational world works in a way that systematically discourages genuine forms of verification.

Once, verification was based on the idea that there was an objective state to be reconstructed. Traditionally, verifying meant making sure that things were in a certain way, or bringing certain evidences of a certain statement to the world.

Today we observe completely different dynamics of the elaboration of judgments: we tend to live in information bubbles and to strengthen our beliefs there. It is not a psychological phenomenon, but something set by the algorithms of our way of living online. On the one hand, there are social networks, in which each individual tends to build a network of "friends" or similar contacts. On the other hand, there is the rest of the Internet, with its search algorithms, its distributors (from Amazon to Netflix) where each user is profiled, and thus receives information and stimuli shaped by their preferences. The result is that a kind of familiar micro-world is structured around each one of us, a microworld that filters and leaves out everything that is foreign. We are in contact (without any real face-to-face interaction) with thousands of people who share our same tastes and opinions, and we receive thousands of suggestions and handpicked information selected so perfectly for us that we feel no need to expand the boundaries of our world.

In these bubbles of shared tastes and opinions, it is difficult to build authentic argumentative paths, because confirmation mechanisms are strengthened. All the typical elements of a genuine discovery path, of a verification path (a surprising fact, a different point of view, a different premise) are minimized, whilst the most recurrent rhetorical pathways seem to be paralogisms, tautologies, generalizations: discursive moves which give only the impression of an argumentative progress.

In these bubbles where confirmation bias dominates, facts are almost always reinforced facts, convincing facts for all, beyond question, according

to an absolutizing mechanism that ends up giving weight, giving reality to discursive stratifications that are independent of any real assessment.

In addition, this aspect brings me to the third "classical approach" to truth that today seems, to my mind, to be entirely inadequate: the idea of sincerity. It should be a basic pragmatic and ethical rule of communication, as theorized by Grice (1991) in his conversational maxims: his maxim of Quality recites "be truthful", do not say what you believe to be false and do not talk about something for which you lack adequate evidence. But this maxim seems to be less and less relevant. Not only it is disregarded in fact, but it is no longer even a criterion, and this is the interesting (and worrying) point about the post-truth regime (and one of the reasons why it is important to speak in terms of the regime: the rules and the criteria relevant for establishing what is true).

The discursive functioning of the contemporary infosphere requires a continuous intervention, we seem to no longer have the right to not react, and any lack of adequate evidence (as mentioned before) cannot be an obstacle to this continual solicitation; we must go further. We feel called to react, for example with a re-tweet, and we do not perceive this "discursive reaction" as the continuation of a speech, we do not feel responsible for this speech. In this way, the kind of sincerity criterion that arises is an emotional and not a cognitive one. "Sincere" today means to be *sympathetic to someone, not to be honest* about reality. Thus, the very category of communicative "commitment" has changed.

And thus there is generally a great deal of confusion surrounding the concept of sincerity: sometimes, intentionally tendentious information circulates whilst being clearly contrary to the principle of sincerity, other times it is information that is simply unverified. "Fake" does not always mean "not sincere"; it may mean wrong, unverified, misinterpreted. Furthermore, jurists are faced with a complex series of problems in this regard.

3. Two useful communication models: hermetism and gossip

If the traditional paradigms of truth are in crisis, then we, as language and communication scholars, have to ask ourselves how truth manifests itself today and how it is legitimized in our media.

My opinion is that in the post-truth regime, two communication models seem more recurrent. Until now, these models have always remained at the margins of our information logic:
  – the one that Umberto Eco calls the "hermetic model"
  – the one at the basis of gossip, as widely studied by sociology.

I will only outline them here.[1]

About the "hermetic model", I make reference to some pages in Eco's essay *I limiti dell'interpretazione* (Eco 1990), in English, *The Limits of interpretation*.[2]

In the text, Eco outlines two models at the base of the Western culture:

– a rational model, based on a criterion of linearity, on causal logic and on the principle of non-contradiction, perfectly expressed by the *modus ponens*:
    If P, then Q.
    P.
    Therefore Q;
– and a hermetic model (which was mainly developed during the Renaissance) based on a different, non-linear type of logic that is not defined by the principle of non-contradiction and, if anything, is founded on the criterion of *similarity*.

For me, what is most interesting about Eco's reflection is precisely the accentuation, in the hermetic model, on the paradigm of *similarity* and the logic of the *secret*.

Similarity becomes a criterion of interpretation and knowledge because, when causal consequentiality is no longer valid, the most legitimate path is the *associative* one.

When the principle of non-contradiction fails, and an associative modality is authorized, the drift becomes inevitable: statements and discursive positions slip between various argumentative domains and this is allowed because the world is associative by nature. A speaker may find himself saying incompatible things, such as "I'm not a racist" and "foreigners steal our jobs" (slipping from the theoretical level to the level of generic political-economic evaluations); or "I believe in science" and "Covid vaccines are not safe" (moving from statements of principle to pseudo-objective observational assessments).

On the other hand, this hermetic modality (which excludes the principle of non-contradiction as a criterion) means that anything can be

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[1] For a more detailed discussion, see Lorusso 2021.
[2] The English edition of the book actually presents many differences from the Italian one, including the reflections about the hermetic paradigm, of which something remains in §1.2 and §1.6 on Neoplatonic thought and in §2.3 on hermetic drift. This is why I prefer to make reference to the original Italian edition.

said (on the basis of a vague principle of association), and if anything and everything can be said, it is because *everything can be true*, even if everything can also be misleading: the valid, solid, epistemic criterion of inclusion and exclusion has disappeared.

We can think about some cases of associative paths typical of the current infodemic:

the Covid vaccine is not recommended in certain age groups;
therefore Covid vaccines can hurt everyone;
if they can hurt, maybe all vaccines can hurt too;
I won't give my baby any kind of vaccine;

However, this hermetic model, based on secrets and plots, intersects with another communicative model, which is absolutely typical of *orality* (which, in spite of the large amount of writing on social networks, is in my opinion the returning form of our current communication): the "gossip model".

What I mean with "gossip" is a kind of exchange of personal information, positive or negative, in an evaluative way, positive or negative, about absent third parties. It is, in terms of anthropology and psychology, a sort of inevitable tendency seen in small social communities. It consolidates community ties, and helps highlighting who is inside and who is outside the social group of reference. As a scholar like Foster (2004) underlines, gossip has four major social functions: it facilitates the flow of information, it provides a form of recreation (gossip has to be "juicy", I would add), it strengthens influence, and it creates group solidarity.

The fundamental *social* function of gossip has no declarative claims. Instead, it is clearly *performative*: in discrediting someone, it marginalizes them, while at the same time strengthening the shared bonds and pleasure among those who partake.

This is, for me, a fundamental point in understanding the fake news phenomenon *as gossip*: most of the time gossip contains no special declarative assumption, no particular commitment to states of affairs or fact. Instead, there is an interpretative gamble or vagueness that operates on the level of the social functioning of the group, introducing a subject/object of controversy and thus reorganizing the patterns of social relations and trust. In this dynamic, one can easily pass from the logic of gossip to that of *rumor*, i.e. from a dynamic that is focused on a specific subject and that addresses a defined community of "neighbors" to a dynamic that by definition is more open and aimed at a more general audience. Anyway, even if we are

dealing with a more general, softer form (that of rumor), its social impact is intense and immediate.

As both semiotics (see Fabbri–Pezzini, eds, *Versus* n. 79, 1998, which includes the aforementioned Pozzato) and epistemology emphasize (see Gelfert 2013), gossip is relevant for its *systemic effects*, not atomistically in relation to single statements. And this aspect is fundamental to understanding fake news: a lot of fake news should not be measured in terms of the distance between the reality of its single statements, but in terms of the *mobilization of the certainty system* it produces.

This systemic quality also emerges from another aspect of gossip, one shared by fake news: a *reconstructive* and revealing character. Gossip has a tendency to reconstruct facts that have already happened and about which, in some way, we already know something, providing a new key to understanding those facts. In other words, gossip rarely presents something completely new. Parasitically, it relies on already-consolidated knowledge (already-consolidated narratives) to reconstruct parts of it in its own way, according to a previously undisclosed detail (to the point that a story of economic competition can be explained by gossip in function of a clandestine romantic relationship between some members of the two parties, just as a political ascent can be explained in its entirety by revealing a photograph that captures the politician in question at dinner with a questionable person of finance).

Partly for this reason, gossip (like rumors) is characterized by a weak cognitive component and a strong perlocutionary component.

4. From truth to legitimacy

In this context, in which the traditional paradigms of truth are in crisis and in which associative models such as the hermetic or performative models such as that of gossip are increasingly widespread, I believe – to conclude – that a criterion still valid, in terms of information ethics, could be the one of legitimacy, in order to rethink those of correctness, objectivity, adequacy.

We know that the distinction between legality and legitimacy has already been drawn (here I refer to Schmitt (1932) defining the whole distance between a formal criterion and void of content), and a criterion that instead finds its foundation not in form but in an "appropriateness" that has a historical-cultural foundation.

The advantage potentially offered by the concept of legitimacy, with regards to that of truth, has to do with the reference to a given context

(wherein truth tends to be a universal ideal), with an element of social recognition (wherein truth does not depend on recognition; it is valid per se) and a processual dimension (wherein truth does not become truthful), which makes the management of discourses more flexible, without abdicating to their deregulation (see, on this subject, Lorusso 2020 as well).

Legitimacy depends on there being conformity with the law, the rules of the current legislation, but even before this, it depends on a preliminary form of appropriateness that makes the exercise of power adequate. In order to say and fix what is legitimate, you must have the right to do so; your exercise of power has to be recognized. Administratively, for example, a defect of legitimacy can be ascribed to incompetence, to a violation of law or an excess of power.

In short, legitimacy involves:

− Norms (cultural norms)
− Rules (legal laws)
− Adequacy and correspondence to the role of exercising power

In a media landscape in which discursive positions have become generalized (and everyone can be a diffuser), in which reality is always intermediated and in which logical consequentiality is no longer a criterion, I believe that thinking of an alternative criterion of "containment" is necessary − a containment that is cognitive and ethical.

Perhaps by thinking of the criterion of "legitimacy" we can recover a way to re-establish hierarchies of knowledge and information.

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Education for a Changing Media in a Changing World

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> *The mission of school is to develop a sense of truth, of what is good and beautiful. And this occurs through a rich path made up of many ingredients. This is why there are so many subjects – because development is the results of different elements that act together and stimulate intelligence, knowledge, the emotions, the body, and so on. If something is true, it is good and beautiful; if it is beautiful; it is good and true; if it is good, it is true and it is beautiful. And together, these elements enable us to grow and help us to love life, even when we are not well, even in the midst of many problems. True education enables us to love life and opens us to the fullness of life.*
>
> Pope Francis (2014) Address with Italian school teachers, parents, educators, and pupils. https://bit.ly/3sKM9AD

All human societies face the common task of transferring a range of skills, values, and sensibilities to the next generation. Societies organize formal institutions to nurture in the next generation the qualities to carry forth the work of culture. Over the last century schooling outside the home has emerged globally as the most important societal institution for the education of the next generation. Basic primary education in schools is today a normative ideal the world over. More children are attending schools than ever before.

There is a lot of good news: "Enrolment of children in primary education is at present nearly universal. The gender gap has narrowed, and in some regions, girls tend to perform better in school than boys and progress in a more timely manner" (United Nations, 2015).[1]

Education is freedom and is "far and away the single most empowering investment for individuals. It is for that reason that the world has long regarded education as a basic human right. Yet we have not yet achieved universal education" (Sachs, 2022).[2] Quality education is the Camino Real for sustainable development, health, and a driver of wellness (Bloom

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[1] United Nations. "The World's Women 2015". United Nations, United Nations, 2015. https://bit.ly/38579sd

[2] Sachs, Jeffrey. "Education and Inequality". *In Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

and Ferranna, 2022).[3] "Seen as part of the global commons, knowledge, learning and education represent humanity's greatest renewable resource for responding to challenges and inventing alternatives" (Giannini, 2022).[4] Ample evidence suggests that education – almost any form that nurtures and supports basic literacy – generates powerful virtuous cycles (LeVine at al., 2011).[5] Researchers have established that an education is perhaps a child's strongest barrier against poverty, especially for girls. Educated girls will have healthier children. They are better paid in the workplace, better able to protect themselves against HIV-AIDS, and more able to participate in decision-making at all levels (United Nations, 2015).

In this Chapter, I first introduce some relevant data on the state of education around the world and the factors that continue to impede progress including the COVID-19 pandemic. Second, I examine the broad features of a conceptual model framing education in the current era of globalization with a focus on the promise and peril of new information, communication and media technologies in education. Finally, I offer a reflection on the new challenges and new opportunities in education today.

Education Now

The global progress in the school attendance of children and youth is a laudable achievement. Yet the work ahead is significant: "Enrollment does not translate directly into education, and education does not translate directly into good education, which is often the real catalyst for engaged citizenship, emotional awareness and human sensitivity, and a tolerance of the other, along with enhanced potential for working collaboratively, productively, and innovatively" (Bloom and Ferranna, 2022).[6] Furthermore, millions of children are out of school and illiteracy remains rampant: 781

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[3] Quoted in Bloom, David E. and Ferranna, Maddalena. "Education, Health, and Demography". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[4] Giannini, Stefania. "UNESCO and The Futures of Education". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[5] LeVine, R.A., LeVine, S., Schnell-Anzola, B., Rowe, M.L., & Dexter, E. (2011). *Literacy and mothering: How women's schooling changes the lives of the world's children*. Oxford University Press.

[6] Bloom et al., "Education, Health, and Demography". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

million adults over the age of 15 remain illiterate – and women make up well over half of those who are illiterate (United Nations, 2015).[7]

The first challenge moving forward is quality education for all. Prior to the pandemic approximately 260 million children and youth were not enrolled in schools – including approximately 60 million children of primary school age, 62 million of lower secondary school age and 138 million of upper secondary age (https://bit.ly/3dei7Po). For those who are attending schools, the little education – especially in the form of literacy, will be vital but perhaps not enough to thrive to their full potential (see https://bit.ly/2t3X7mQ).[8] Too many children in low and lower middle-income countries are falling further and further behind their peers in the wealthy nations. According to Research by the Center for Universal Education at Brookings "at the current pace of change, it could take approximately 100 years for those furthest behind to catch up to the learning levels of those for whom the education system is working well" (https://brook.gs/3mnGkIm).[9]

The second challenge facing schools is unfolding at a vital link between the wealthy countries in the Northern Hemisphere and the global South. Schools are struggling to properly educate growing numbers of immigrant and refugee youth arriving in Europe, North America, Asia, Australia and elsewhere; many immigrant and refugee youngsters are marginalized as racially, ethnically, religiously, and linguistically marked minority groups (Banks, Suárez-Orozco, Ben-Peretz, 2016).[10] The marginalization of immigrant and refugee youth is increasing and their social belonging is thwarted.[11]

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[7] United Nations, "The World's Women 2015". https://bit.ly/37ZYV4I

[8] Roser, Max, and Ortiz-Ospina, Esteban. "Literacy". Our World in Data. OurWorldInData.org, August 13, 2016. https://ourworldindata.org/literacy

[9] See, Rebecca Winthrop and Lauren Ziegler. "No learner left behind: Embracing the leapfrog mindset to achieve the SDGs". Brookings, Wednesday, September 25, 2019. https://brook.gs/2Wbn71l

[10] Banks, James A., Marcelo Suárez-Orozco, and Miriam Ben-Peretz, eds. *Global migration, diversity, and civic education: Improving policy and practice*. Teachers College Press, 2016. https://bit.ly/3kfo2WN

[11] In Europe, the failure to properly educate the children of Muslim immigrants became clear as the results of the Program for International Student Assessment (PISA) study sent shockwaves as countries such as Germany confronted their poor records in educating their neediest pupils – those originating in refugee and immigrant-headed homes. See, Süssmuth, Rita. "On the need for teaching intercultural skills". *Learning in the global era: International perspectives on globalization and education* (2007): 195-290. https://bit.ly/3mo8tyS. See also Crul 2019, https://bit.ly/3mo8tyS. In the United States, the enduring racial achievement gap, as well as the very uneven educational

Third, the curiosity leading to Newton's "great ocean of truth"[12] withers in too many schools. In both high and middle-income countries, the predominant phenomenology of experience for too many youths in school is the antonym of curiosity: it is boredom and disengagement.[13]

Education faces new challenges in a world more globally interconnected and more unequal. For many youths growing up in low- and lower middle-income countries, poverty is the other pandemic extracting a heavy toll on children and youth. Hunger and malnutrition – even as progress is made – continue to cripple millions. "A total of 842 million are estimated to be suffering from chronic hunger, regularly not getting enough food to conduct an active life".[14] School readiness is a distant mirage for millions of children.[15]

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trajectories of the children of Latin American, Caribbean, and some Asian immigrants – now the fastest growing sector of the U.S. child population – augurs trouble ahead as the new economy is increasingly unforgiving of those without the skills and credentials required for functioning in the knowledge-intensive sector of the opportunity structure, and as a high-school diploma has yielded steadily diminishing returns (see, for example, Suárez-Orozco, Suárez-Orozco, & Todorova 2007) https://bit.ly/2WeoxrO. The results of these general trends are painfully obvious in multiple measurable ways: from the high dropout rates among immigrant, ethnic, and racial minorities in many wealthy countries, to stark differences in achievement patterns between native and racialized minorities. See for example Hugonnier, Bernard. "Globalization and education", in *Learning in the global era: International perspectives on globalization and education* (2007): 137-157, https://bit.ly/3mo8tyS; Wikan, Unni. "Rethinking Honor in Regard to Human Rights" in *Learning in the global era: International perspectives on globalization and education* (2007) https://bit.ly/3mo8tyS

[12] Sir Isaac Newton's words echo through the ages: "I seem to have been only like a boy playing on the sea-shore and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me". https://bit.ly/3gTfXGS

[13] Suárez-Orozco, Carola, and Marcelo M. Suárez-Orozco. *Transformations: Immigration, family life, and achievement motivation among Latino adolescents*. Stanford University Press, 1995.

[14] Food and Agriculture Organization of the United Nations. "Hunger-Facts". Food and Agriculture Organization of the United Nations, 2021. http://www.fao.org/zhc/hunger-facts/en/

[15] Head Start of the US Department of and Human Services defines school readiness as, "… foundational across early childhood systems and programs. It means children are ready for school, families are ready to support their children's learning, and schools are ready for children. Head Start views school readiness as children possessing the skills, knowledge, and attitudes necessary for success in school and for later learning and life. Physical, cognitive, social, and emotional development are all essential ingredients of school readiness. Managers, teaching staff, caregivers, family advocates, and families can

Children are the most visible victims of undernutrition. It is estimated that undernutrition − including stunting, wasting, deficiencies of vitamin A and zinc, and fetal growth restriction (when a baby does not grow to its normal weight before birth) − is a cause of 3.1 million child deaths annually or 45 percent of all child deaths in 2011 (UNICEF, World Health Organization [WHO], & The World Bank, 2018).[16] Undernutrition magnifies the effect of every disease, including measles and malaria (World Hunger, 2018).[17]

Twenty percent of all children around the world are undernourished. And most of them are suffering from long-term malnourishment that has serious health implications that will keep them from reaching their full potential. Malnutrition causes stunting − when the body fails to fully develop physically and mentally − and increases a child's risk of death and lifelong illness. A child who is chronically hungry cannot grow or learn to their full ability. In short, it steals away their future (Mercy Corps, 2020).[18] The consequences on for learning are chilling, "different poverty indicators are associated with lower cognitive and academic performance during several stages of development. Psychological and neural evidence generated in recent years suggests the need to review the interpretations of these associations in the sense of deficit, and to consider the occurrence of adaptive processes instead" (Lipina, 2022).[19]

Extreme poverty deprives millions of children of the basic resources for life: clean water, proper nutrition, safe shelter, and the proper supervision required for survival and positive human development (Ibid). In low-income countries, "almost five million children under the age of five die of malnutrition-related causes every year" (FAO, 2021).[20] Furthermore, "Se-

learn more about creating enriching and supportive learning environments for young children ages birth to 5". https://bit.ly/3B2yDeI

[16] World Health Organization. UNICEF-WHO low birthweight estimates: levels and trends. https://uni.cf/3sDM5mo

[17] World Hunger Education Service. "World Hunger, Poverty Facts, Statistics 2018". World Hunger News. World Hunger Education Service, November 29, 2018. https://www.worldhunger.org/world-hunger-and-poverty-facts-and-statistics/

[18] Mercy Corps. "The Facts: What You Need to Know about Global Hunger". Mercy Corps, August 4, 2020. https://www.mercycorps.org/blog/quick-facts-global-hunger

[19] Lipina, Sebastián. "Child Poverty and Cognition: Developmental and Educational Implications", in *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[20] Food and Agriculture Organization of the United Nations. Hunger-Facts: "Maternal and child undernutrition contributes to 45 percent of deaths in children under five. As a consequence, life expectancy at birth in low-income countries is on average

vere acute malnutrition affects nearly 20 million preschool-age children, mostly from Africa and South-East Asia" and "162 million children are stunted; 99 million are underweight and 51 million are wasted due to acute malnutrition" (Ibid.).[21]

Poverty, war and terror, disease, structural racism, unchecked climate change, the "globalization of indifference", an extreme form of which is modern child slavery, thwart the opportunities for healthy development and wilt the flourishing of millions of children. Indeed, they represent the most significant undertow towards meeting the UN millennial development goals of reaching universal basic education.[22]

The COVID-19 Catastrophe

For millions of children, the COVID-19 pandemic represents a long-lasting catastrophic emergency robbing them of the daily attending-school-rituals with all that entails: learning opportunities, socializing with other children, seeking supports from teachers, physical education, accessing health care and nutrition, and the various other scaffolds needed for developmentally appropriate socio-emotional, cognitive, and meta-cognitive growth.

The pandemic stunned education systems with geologic force: by early 2020 approximately 1.5 billion students were no longer attending in person school as school closings became mandatory in some 160 countries (see Giannini, 2022).[23] And as millions of children would eventually continue their learning remotely via new information, communication and media technologies, UNICEF data suggest that "for at least 463 million children whose schools closed due to COVID-19, there was no such thing as 'remote learning'" (Ibid.).[24] Millions lacking access to electricity, technology, and internet access could not engage in online learning.

two decades less than in high-income countries. Food and Agriculture Organization of the United Nations. "Latest Issue: SOFI 2020". FAO. Food and Agriculture Organization of the United Nations, 2021. http://www.fao.org/publications/sofi/en/

[21] Food and Agriculture Organization of the United Nations. "Hunger-Facts". http://www.fao.org/zhc/hunger-facts/en/

[22] United Nations. "United Nations Millennium Development Goals". United Nations. United Nations, n.d.. https://www.un.org/millenniumgoals/education.shtml

[23] Giannini, Stefania. "UNESCO and The Futures of Education", in *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[24] UNICEF. "UNICEF Executive Director Henrietta Fore's Remarks at a Press Conference on New Updated Guidance on School-Related Public Health Meas-

During COVID over 830 million students did not have access to a computer at home. In many low-and-lower middle-income countries, school closures put children on the streets. "Families are desperate for money. Children are an easy source of cheap labor".[25] Because of the pandemic, "An additional 100 million children could fall below the minimum proficiency level in reading ... Lost learning is being counted in months and taking a rising toll on the mental health of students. Progress made towards narrowing gender gaps in education over past decades could be reversed, with girls at increased risk of exposure of early marriage and drop out" (Giannini, 2022).[26]

The cumulative loss of learning is staggering. By the first quarter of 2021, more than 160 million children "around the world have missed school for nearly a year due to COVID-19 restrictions" (UNICEF, 2021). Fourteen countries "worldwide have remained largely closed since March 2020 to February 2021" (Ibid.). Two-thirds of those countries are in Latin America and the Caribbean (Ibid.).[27] Bloom and Ferranna summarize COVID's impact on education as of this writing, "School closures and difficulties in implementing effective remote learning generally reduce the pleasure of learning, hinder children's socialization opportunities, degrade the emotional and mental health of students, and increase the risk of domestic violence and abuse In addition, school closures disrupt immunization and other health services that are often provided at school and prevent many children from accessing the only nutritious meal of their day. School closures also exert considerable pressures on parents, who have to balance childcare, home schooling, and work duties" (Bloom and Ferranna, 2022).[28]

ures in the Context of COVID-19". UNICEF, June 17, 2021. https://www.unicef.org/press-releases/unicef-executive-director-henrietta-fores-remarks-press-conference-new-updated

[25] Gettleman, Jeffrey, and Suhasini Raj. "As Covid-19 Closes Schools, the World's Children Go to Work". The New York Times. The New York Times, September 27, 2020. https://www.nytimes.com/2020/09/27/world/asia/covid-19-india-children-school-education-labor.html

[26] Giannini, Stefania. "UNESCO and The Futures of Education", in *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[27] UNICEF. "COVID-19: Schools for More than 168 Million Children Globally Have Been Completely Closed for Almost a Full Year, Says UNICEF". UNICEF, June 3, 2021. https://www.unicef.org/press-releases/schools-more-168-million-children-globally-have-been-completely-closed

[28] Bloom, David E. and Ferranna, Maddalena. "Education, Health, and Demogra-

The pandemic has intensified already obscene levels of inequality in opportunities to learn. Bridgid Barron notes, "Although unequal access to information technologies had been documented well before the COVID-19 pandemic, dramatic school closures have brought a significant digital divide into sharp relief and exposed the ongoing cost of inequities, as teachers across the world scrambled to continue the education of millions of children. Radio, television, and the internet were deployed in an attempt to connect schools and homes. Learners in rural areas, citizens from less affluent countries, families who have less wealth, and female students were the least likely to have access to any of these forms of remote learning" (Barron, 2022).[29]

Indeed COVID-19 laid bare for the world the deepening inequalities in opportunities to learn that flow from country-of-origin, race, ethnicity and immigration background. COVID sent another 100 million human beings into extreme poverty – intensifying extreme poverty and reversing years of progress (see World Bank, 2021).[30]

Education in the Global Era

Globalization defines our era. Broadly conceived, it is "what happens when the movement of people, goods, or ideas among countries and regions accelerates" (Coatsworth, 2004, p. 38).[31] The three "M's" of globalization give shape to its most current iteration: (1) Markets (their integration and disintegration); (2) Media, the information, communication and social media technologies that de-territorialize labor, put a premium on knowledge intensive work, and stimulate new longings and belongings, as well

phy". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[29]Barron, Brigid. "Education & Technology for Equity in Learning Opportunities". *In Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[30] World Bank estimates that "Global extreme poverty is expected to rise in 2020 for the first time in over 20 years as the disruption of the COVID-19 pandemic compounds the forces of conflict and climate change, which were already slowing poverty reduction progress… The COVID-19 pandemic is estimated to push an additional 88 million to 115 million people into extreme poverty this year, with the total rising to as many as 150 million by 2021, depending on the severity of the economic contraction. See "COVID-19 to Add as Many as 150 Million Extreme Poor by 2021" https://bit.ly/3kdU1GX

[31] Coatsworth, John H. "Globalization, growth, and welfare in history". In *Globalization: Culture and education in the new millennium* 38 (2004): 55. https://bit.ly/3miWFxX

as hatreds and divisions; and (3) Migration, the mass movement of people on a planetary scale. While globalization is neither new nor exceptional, the rate and the depth of global change is novel. Globalization – new economies, new media technologies and new demographies – represents the most significant challenge to school systems since the origins of mass public education.

Global technological change is creating new challenges but also new opportunities. Routine manual and cognitive tasks will continue to be hallowed out by automation. It is also true that dramatically increased automation, robotics, Artificial Intelligence, and Computer Assisted Design will require workers with new skills to complement and further refine productive work. As some categories of work become anachronistic, new kinds of work shall come to life. The returns to education will continue to accrue disproportionately to highly skilled workers but dignified low skill work is far from disappearing. Indeed "the digital era has catalyzed labor market polarization – that is the simultaneous growth of high-education, high-wage and low-education/low-wage jobs at the expense of middle-skill jobs" (see, The Work of the Future, MIT, 2020) (https://bit.ly/3wZw634).

> [D]igital automation tends to displace middle-skill workers performing routine codifiable tasks, such as sales; office and administrative support; and production, craft and repair occupations. Figure 5 shows that in 1970, these middle-skill occupations accounted for more than a third (38 percent) of employment. By 2016, this share had fallen to less than one-quarter (23 percent) of employment. To be clear, this decline is not due solely to digitalization, as international trade added substantially to the displacement of middle-skill production and operative jobs during the 2000s.
>
> Ironically, digitalization has had the smallest impact on the tasks of workers in low-paid manual and service jobs. Those positions demand physical dexterity, visual recognition, face-to-face communications, and situational adaptability. Such abilities remain largely out of reach of current hardware and software but are readily accomplished by adults with moderate levels of education.
>
> As middle-skill occupations have declined, manual and service occupations have become an increasingly central job category for those with high school or lower education.
>
> Thus, unlike the era of equitable growth that preceded it, the digital era has catalyzed labor market polarization – that is the simultaneous growth of high-education, high-wage and low-educa-

tion, low-wage jobs at the expense of middle-skill jobs. This lopsided growth has concentrated labor market rewards among the most skilled and highly-educated workers while devaluing much of the non-specialized work that remains.

This imbalance contributes to the vast divergence of earnings between college- and non-college-educated workers in recent decades (The Work of the Future, 2020, p. 22) (https://bit.ly/3wZw634).

There is a rapidly expanding internationalization of production, distribution, and consumption of goods and services. Local economies are ever more integrated into complex webs of global relations. First, new global networks of production, fueled by increasing levels of international trade, foreign direct investment, migrant remittances, and capital flows – now approximately a trillion dollars each day – set the pace for socioeconomic life in every continent of earth. Second, production is increasingly de-territorialized by new media technologies as growing categories of work can be done – within clear limits[32] – nearly anywhere on earth. As Levy and Murnane argued over a decade ago (2007)[33] tasks that are rule-based and easily broken down into constituent units are easily outsourced: data for a tax company based in Boston are entered and synthesized in Bangalore, X-rays for a hospital in Brussels are read and analyzed in Buenos Aires – at a fraction of the cost. New communication networks, especially high-speed, low-cost connections and the digitization of data, are putting a premium on knowledge-intensive work.

Furthermore, global supply chains – "the vast network of factories, warehouses, and shipping conduits through which products flow" are changing the shape and place of work the world over" (See Posner, 2019).[34] Over the past three decades the insertion of China, India, and the Russian Federations into the global system of production and distribution has added well over a billion workers to the worldwide labor force. As a result, today there

[32] Casselman, Ben. "The White-Collar Job Apocalypse That Didn't Happen". The New York Times. The New York Times, September 27, 2019. https://www.nytimes.com/2019/09/27/business/economy/jobs-offshoring.html?searchResultPosition=1

[33] Levy, Frank, and Richard Murnane. "How computerized work and globalization shape human skill demands". *Learning in the global era: International perspectives on globalization and education* (2007): 158-174. https://bit.ly/3mo8tyS

[34] Posner, Miriam, Jill Lepore, and Jeffrey Marlow. "The Software That Shapes Workers' Lives". The New Yorker, 2019. https://www.newyorker.com/science/elements/the-software-that-shapes-workers-lives

are some half a billion educated Indians, Chinese, and Russians competing for jobs with graduates from universities in the Western world.

Global patterns of mobile capital and mobile production, are stimulating and accelerating internal and international labor migration. International migration has grown rapidly since the turn of the millennium (See Suárez-Orozco 2022).[35]

Education & Changing Media Technologies in the Age of Global Inequality

Across the globe digital technologies and new media platforms are transforming the ways we work, communicate, learn, worship and play. The place of new media in education is at once complex and paradoxical. The promise new media technologies afford to reach and engage children who currently have little or no opportunities to learn has been lauded the world over.

Children in faraway places with little infrastructure can learn to read via new creative apps. As a recent UNICEF report states, "if leveraged in the right way and universally accessible, digital technology can be a game changer for children being left behind – whether because of poverty, race, ethnicity, gender, disability, displacement or geographic isolation – connecting them to a world of opportunity and providing them with the skills they need to succeed in a digital world".[36] The 2019 XPrize competition embodied one such endeavor.[37] With strong new media literacies in place,

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[35] Suárez-Orozco, Carola. "Countering Cascading Xenophobia: Educational Settings at the Frontline". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[36] UNICEF. "Children in a Digital World – UNICEF". UNICEF Division of Communication, 2017. https://www.unicef.org/media/48601/file

[37] The 2019 XPrize awarded by Elon Musk – disclosure, I served in the Board of Advisors of the 2019 Education XPrize – was awarded to KitKit School out of South Korea and the U.S., and onebillion, operating in Kenya and the U.K. Xprize set its 2019 award to support the development of scalable services that could enable children to teach themselves basic reading, writing and arithmetic skills within 15 months. The tests required each competing platform to be field-tested in Swahili, reaching nearly 3,000 children in 170 villages across Tanzania. Kitkit School, with a team from Berkeley, Calif. and Seoul, developed a program with a game-based core and flexible learning architecture to help kids learn independently, while onebillion merged numeracy content with literacy material to provide directed learning and activities alongside monitoring to personalize responses to children's needs. Shieber, Jonathan. "Xprize Names Two Grand Prize Winners in $15 Million Global Learning Challenge". TechCrunch. TechCrunch, May 16, 2019. https://techcrunch.com/2019/05/15/xprize-names-two-grand-prize-winners-in-15-million-global-learning-challenge/

new technologies can be tools for what Pope Francis calls a "humane globalization", fostering curiosity, engagement, and fraternity.

But new media in education also intensify educational inequities[38] and are creating new concerns in a number of basic educational domains, *seriatim*, (1) its long-term impacts on reading,[39] (2) socio-emotional learning,[40] (3) cyber bullying and (3) concerns that the new media undermine empathy (Ibid.), (4) give children and youth to access of inappropriate materials, and (5) can be lethally effective new tools for exploitation and trafficking of children and youth. The purposely designed addictive features found in new media platforms open another area of deep concern. So do the raise of online hatred and intolerance.

Qua education, Bridgid Barron, the Stanford scholar of education and technology, has noted "Although concerns about data privacy, access to inappropriate content, and increased potential for exploitation are raised, the [UNICEF] report also highlights the significant equity challenge reflected by growing evidence of differential use by children and youth with more and financial assets, digital skills, access to devices, or the quality and stability of their Internet connections that can help them use the technology in empowered ways. Over a third of youth worldwide do not have Internet access and most of these young people are in developing countries" (See Barron, 2022).[41]

The COVID-19 pandemic renewed expectations that new media would be deployed to effectively continue the education of children via remote teaching and learning. While there are excellent examples of good educational work during COVID conducted via the new technologies,[42] the evidence is mixed,

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[38] See "Children in a Digital World – UNICEF, 2017". https://uni.cf/3khSwaT

[39] Wolf, Maryanne. "The Future of Literacy in a Digital Culture: Reconciling the Promise and Perils in our 'Hinge Moment'". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[40] Katzir, Tami. "The Feeling of Reading in a Changing World: From Neurons to Narratives". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[41] Barron, Brigid. "Education & Technology for Equity in Learning Opportunities". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[42] Reimers, Fernando M., Uche Amaechi, Alysha Banerji, and Margaret Wang. "Can universities and schools learn together? Connecting research, teaching and outreach to sustain educational opportunity during a pandemic". An educational calamity (2021): 3.

The COVID-19 pandemic saw schools the world over turn to digital technologies for continuing schooling millions of children. This rapid innovation has led to great enthusiasm about the potential for networked tools to provide more children with low-cost access to learning opportunities that might help minimize existing educational inequities. Ambitious initiatives to provide inexpensive computing power to those most in need have distributed networked laptops to children in remote villages and urban centers, in the hope that provision of access to content and modern tools would fuel learning. Although these experiments have yielded important insights, they largely failed to lead to significant transformation in educational practice (Gomez et al., 2022).[43]

Research suggest that schools vary widely in how well they envision the purposes of using technology, prepare their teachers, and provide the infrastructure for sustaining working tools and these uses correlate with affluence (Barron, 2022).[44] "A great deal of technology use also takes place outside school. Families leverage their own background knowledge, traditional literacy skills, values, and connections to knowledgeable social networks as they incorporate technology into their family routines in ways that might support children's learning and social development. Significant gaps in preparation to leverage technology to connect homes and schools, unequal access to the Internet and devices, and differential teacher and parent knowledge have limited our capacity to sustain learning in a time of crisis" (Ibid.).[45]

Other scholars have noted that new media are failing to connect with the very students they would benefit the most – those from underserved communities. Gomez et al.,[46] provide two vivid examples,

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[43] Gomez, Louis M., Biag, Manuelito, and Imig, David G. "Improvement Science: The Social Glue that Helps Helpers Help?". In *Education: The Global Compact In A Time Of Crisis.* Columbia University Press, 2022. https://bit.ly/3j7Rpva

[44] Barron, Brigid. "Education & Technology for Equity in Learning Opportunities". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[45] Barron, Brigid. "Education & Technology for Equity in Learning Opportunities". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[46] Gomez, Louis M., Biag, Manuelito, and Imig, David G. "Improvement Science: The Social Glue that Helps Helpers Help?". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

Consider, for example, Sesame Street, one of the earliest innovations designed to bolster disadvantaged children's literacy development. While generally hailed as a success, the innovation did not reach those for whom it was originally intended. Although middle and upper-middle-class families used Sesame Street extensively, it was underused by disadvantaged children, and families… Another example is Khan Academy, a well-conceived innovation that seeks to extend access to high-quality instructional materials. As an educational website with thousands of videos and other resources, Khan Academy allows anyone interested, as its tagline puts it, to "learn almost anything – for free". Khan Academy holds the promise of revolutionary power for some of the world's most disadvantaged students… While a study of the use of Khan Academy (see Murphy et al., 2014)[47] reports positive reception by teachers and students, it also reports significant variation across sites. In addition, data suggest that a majority of teachers believed that Khan Academy would be most useful for their most advanced students, and not the disadvantaged populations they were hoping to serve. For example, only 25% of teachers reported that Khan Academy resources would be effective with students who lag most behind their age group in mathematics. Perhaps, more often than we would naively expect, innovations like Sesame Street and Khan Academy, which are designed to assist those most in need, often experience underuse or potentially detrimental use (Gomez et al., 2022).[48]

Following Pope Francis' radical call for an education global compact (https://bit.ly/2UDedci), schools need to articulate a systematic approach to education consciously tailored for a new era of global solidarity and *convivencia*.[49] Solidarity and disrupting inequalities must be explicit priorities for education. Schools need to foreground education's foundations in the

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[47] Murphy, Robert, Larry Gallagher, Andrew E. Krumm, Jessica Mislevy, and Amy Hafter. "Research on the Use of Khan Academy in Schools". Menlo Park: SRI International. 2014. https://www.sri.com/wp-content/uploads/pdf/khan-academy-implementation-report-2014-04-15.pdf

[48] Gomez, et al. "Improvement Science: The Social Glue that Helps Helpers Help?". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[49] Exemplary models abound, see, inter alia, Suárez-Orozco, Marcelo M., and Carolyn Sattin, "Educating the Whole Child for the Whole World: The Ross School Model and Education for the Global Era". New York University Press, October 6, 2010.

virtues,[50] ethics,[51] morals,[52] civics[53] on the sense of purpose[54] and on bold humanistic ideals.[55] Schools the world over are endeavoring to develop innovations in student-centered, hands-on learning to nurture the new competencies and sensibilities better aligned to 21st Century economies and societies.[56]

In the 4th Industrial Revolution problem solving, articulating arguments and deploying verifiable facts or artifacts to substantiate and communicate it, learning to synthesize, learning to learn,[57] thinking about thinking (metacognition), and working and networking with others from different backgrounds will be favored in the opportunity structure. Students must also be prepared to work ethically with peers who are likely to be from different national, linguistic, religious, and racial backgrounds.[58] Fluency in

https://www.barnesandnoble.com/w/educating-the-whole-child-for-the-whole-world-marcelo-suarez-orozco/1100311595?A=9780814741405

[50] Gardner, Howard. "On Educating the Three Virtues: A Hegelian Approach". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[51] Hösle, Vittorio. "Ethics in Education and Education of Ethics". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[52] Zamagni, Stefano. "Education as a Moral Responsibility". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[53] Rogers, John. "Educating for Democracy in Contentious Times". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[54] Damon, William, and Colby, Anne "Education and the Life of Purpose". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[55] Giannini, Stefania. "UNESCO and The Futures of Education". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[56] Winthrop, Rebecca, and Lauren Ziegler. "No Learner Left behind: Embracing the Leapfrog Mindset to Achieve the SDGs". Brookings. Brookings, September 25, 2019. https://www.brookings.edu/blog/future-development/2019/09/25/no-learner-left-behind-embracing-the-leapfrog-mindset-to-achieve-the-sdgs/

[57] "Going to school means opening your mind and heart to reality in all its richness and various dimensions. If one learns how to learn – this is the secret, learning to learn – this will stay with you forever". Pope Francis, "Humanity, Ethics Must Be at Center of AI Technology, Pope Says". Catholic News Service, February 28, 2020. https://www.catholicnews.com/humanity-ethics-must-be-at-center-of-ai-technology-pope-says/

[58] Gardner, Howard, and Veronica Boix Mansilla. "1. From Teaching Globalization To Nurturing Global Consciousness". In *Learning in the global era*, pp. 47-66. University of California Press, 2007. https://bit.ly/3mo8tyS

multiple languages and intercultural skills to live, learn, and communicate with colleagues, peers, friends and neighbors, often from different countries will have a premium.[59]

Yet the ethos in most schools today is anachronistic to the new realities animating the world of children and youth. Precious few schools today are organized to nurture the mind and heart needed to engage in an ever more interconnected, miniaturized and fragile world. Too many school systems continue to teach sclerotic facts and struggle to cope with the increasing ambiguity, complexity, and linguistic, religious, and ethnic diversity that defines the reality of cities large and small around the world. The work of education in the twenty-first century will be to nurture and stimulate cognitive skills, interpersonal and cultural sensibilities of children and youth whose lives will be engaged in local contexts and yet will be suffused with larger transnational realities. We must redouble efforts to create, assess, and expand new models of education that are better synchronized with the economies and societies of today. The effervescence over the promise of new media technologies and platforms in education has been tempered. While there are significant opportunities, the challenges we outlined in this paper must be addressed.

Summary and Reflections

In this Chapter, first we examined some relevant data on education the world over. We established that significant progress continues to be made in terms of access to schooling the world over. But we must do better: today approximately 260 million children and youth are not enrolled in primary and secondary schools. Second, we examined the new normal: everywhere more is asked of education. It is the Camino Real for development and a driver of wellness. Third, we examined extreme poverty and marginalization as the grave undertow threatening to drawn millions of children. Millions of children lack the basic resources for life. To disrupt these obscene inequalities massive global investments in sustainable development – clean water, infrastructure, roads, new schools – need to be prioritized.[60] Institutions need to be set and strengthened to create and nourish new teach-

[59] Michikyan, Minas, and Carola Suárez-Orozco. "Adolescent media and social media use: implications for development". (2016): 411-414.

[60] Suárez-Orozco, Carola. "Countering Cascading Xenophobia: Educational Settings at the Frontline". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

er preparation programs, public health programs, and community-based programs for adult literacy. New technologies – when carefully calibrated with proven curricula and supported teachers – can create new virtuous cycles even in remote corners of earth.

Fourth, we examined the catastrophic effects of the COVID-19 pandemic on children and youth in schools. COVID showed the world the deepening inequalities of opportunities to learn that flow from country-of-origin, race, ethnicity and immigration background. COVID sent another 100 million human beings into poverty – intensifying extreme poverty and reversing years of progress. Fifth, we outlined the broad features of a conceptual model framing education in the current era of globalization. We examined the three "M's" of globalization: (1) Markets (their integration and disintegration); (2) Media, the information, communication and social media technologies; and (3) Migration, the mass movement of labor on a planetary scale.

Sixth, we argued that the forces giving the 4th industrial revolution its kinetic momentum, *inter alia,* automation, robotics, Artificial Intelligence, and Computer Assisted Design will create demand for new skills to complement the technological advances in the work place. We outlined the nature of the new skills. The claims that the current version on the ongoing technological revolution augurs the end of work seem premature at best, alarmist at worst. So, schools will continue to search for better synchronicity with the changing nature of human work.

But the idea that schooling should factory belt delivering workers ready and relevant to today's systems of production and distribution is vulgar and misses the nature of what schools do best.[61] Schooling as we now understanding it – first imagined by the Greeks – must endeavor to educate

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[61] The world is facing multiple crises – pandemics, environmental and climate change catastrophes, racism and xenophobia, growing inequality and extreme poverty. Stefania Giannini (2022) argues, we have "an education crisis that mirrors a wider global crisis, one that is social, moral and environmental". (https://bit.ly/3j7Rpva) Tired-old claims, silver bullets, and magical thinking will no longer do. Nor will averting our gaze to growing inequities in education. Schools, the world over, must endeavor to educate the whole child for the whole world. "Through a humanistic and holistic vision of education and development, which cannot simply be framed in terms of economic growth, learners need the knowledge and the values to live meaningful and purposeful lives in harmony with others and the planet" (Giannini, 2022). https://bit.ly/3j7Rpva Schools need to be laboratories reclaiming the shared ethical principles of reciprocity, solidarity, equity, inclusion, and fighting all forms of discrimination.

"the whole child for the whole world".[62] Education must serve children and youth for "doing" and "living" well – the flourishing Aristotelian ideal of *eudemonia*. Education must also be to prepare youth for an ethical life of civic engagement, belonging, and participatory and transformative citizenship. And today more than ever schools must give children and youth all the tools – from sciences, the social sciences, the humanities and from ethics – to emerge as champions fighting unchecked climate change and environmental dystopia, the existential threat of our times.[63]

Education is more important than ever before in human history and we now have a much fuller understanding of the causal pathways by which education generates better health, a more engaged citizenry, and patterns of status mobility.[64] A strong corpus of sociological, demographic, economic, and psychological research has mapped the effects of education – measured most often by years of schooling on individual socio-economic mobility (human capital), social cohesion (social capital), and health and wellbeing (see Bloom and Ferranna, 2022).[65] The preponderance of evidence, for some time now, is hardly surprising: quality schooling tends to generate powerful virtuous cycles. Perhaps the most exciting of these findings is the general nexus between schooling, literacy, and health outcomes throughout the world.[66]

Above all schools at their best make children love life and embrace its fullness. I return to the teachings of the Holy Father Pope Francis:

> The mission of school is to develop a sense of truth, of what is good and beautiful. And this occurs through a rich path made up of many ingredients. This is why there are so many subjects – because de-

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[62] Suárez-Orozco, Marcelo M. and Sattin, Carolyn, "Learning in the Global Era". https://bit.ly/3mo8tyS

[63] Marcelo Suárez-Orozco and V. Ramanathan, opinion contributors. "Climate Change: Students, Finally, Are on Fire". The Hill. September 26, 2019. https://thehill.com/opinion/energy-environment/463304-climate-change-students-finally-are-on-fire

[64] Suárez-Orozco, Marcelo M. and Sattin, Carolyn. "Learning in the global era". https://bit.ly/3mo8tyS

[65] Bloom and Ferranna, 2022, "Education, Health, and Demography". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

[66] Bloom and Ferranna, 2022, "Education, Health, and Demography". In *Education: The Global Compact In A Time Of Crisis*. Columbia University Press, 2022. https://bit.ly/3j7Rpva

velopment is the results of different elements that act together and stimulate intelligence, knowledge, the emotions, the body, and so on. If something is true, it is good and beautiful; if it is beautiful; it is good and true; if it is good, it is true and it is beautiful. And together, these elements enable us to grow and help us to love life, even when we are not well, even in the midst of many problems. True education enables us to love life and opens us to the fullness of life".

(Pope Francis, Address with Italian school teachers, parents, educators, pupils and other workers, May 10, 2014).

A Media Ecology for a Platform Society

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1. Introduction

My paper proposes an ecological perspective[1] on current developments in the media system – dominated by the power of platforms – and communication in general, as it unfolds today, in hybrid[2] environments, mediated by algorithms, and traversed by anti-communicative practices such as misinformation and various forms of verbal violence and dissemination of prejudice.

A perspective of this kind implies, on the one hand, a descriptive dimension, attentive to the ecosystem of the media as it is configured in relation to other aspects of the environment and society in general. The arising questions at this level are: how is the media ecosystem configured today? What are its distinctive features compared to its previous stages? What role do the media play in shaping communicative norms and customs, and what communicative forms tend to prevail through them?

On the other hand, the ecological perspective implies a critical dimension, able to highlight viable solutions to the problems posed by the media and their impact on social life and individuals. At this level the questions are: can we imagine steering the media ecosystem in a more fruitful direction, one that does not merely follow the footprints of technological progress or market laws? And as for human communication: can we save its original function? Do we need to be more conscious about the role of communication?

Both perspectives are valuable in understanding the current moment, which the pandemic has partly shaped, both by accelerating the processes of change taking place in the entire media system (now characterized by a predominance of the platform model), and by increasing what we might call sustainability sensitivities (and policies) in relation to the infosphere.

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[1] F. Colombo, *Ecologia dei media. Manifesto per una comunicazione gentile,* Milano, Vita e Pensiero 2020.

[2] See for instance A. Chadwick, *The Hybrid Media System: Politics and Power*, II Edition, Oxford, Oxford University Press 2017.

The recent debate on the green turn – driven by the need for wide-ranging interventions aimed at reducing global warming – has made a new fact evident, at least for public opinion: the planet cannot be saved at zero cost. Environmental policies cost money, and their costs fall on everyone, including those with fewer resources, creating new complexities and requiring comprehensive policies to reduce inequalities and guarantee welfare.

Interventions on the pollution of the infosphere and its consequences may also not be free of cost: they may involve public intervention that limits – at least on the surface – freedom of expression, and in some cases constrains the communicative behavior of citizens, reducing their margins of autonomy.

In this paper, I will try to show how ecological sensitivity is gradually permeating our symbolic universe, with visible consequences also in the universe of media and platforms. My speech will be divided into three parts: first, I will highlight the evolution of the platform-centered media ecosystem before the Pandemic; then I will describe some processes that – although they started before the Pandemic – exploded during the great crisis of Covid-19, leading to a growing conflict between policies to contain the "pollution" of the infosphere and the way we define democratic freedoms. Finally, I will try to describe the ecological processes underway in the field of media and platform governance, and suggest a framework of interpretation useful to define non contradictory policies to reduce conflicts and rethink paradigms of communication quality.

1. The media ecosystem before the pandemic

My starting point is that the pandemic – rather than being a revolutionary turning point – is an accelerator of social and symbolic processes that *have been going on* for years.

These processes involve both medium-term and short-term factors. In other words, I think that, in order to understand what is happening during the pandemic, we must place ourselves from an analytical point of view 'at the right distance' from the phenomena and not overemphasize the most obvious aspects.

Let us start with the medium-term factors. I am sure we all agree that, from the point of view of communication and media studies, the most significant factor has been the rise of platforms.

The explosion of the Internet speculative bubble (2000) and then the attack on the Twin Towers on 11 September (2001) marked an overall

turning point that restructured the network as it had been imagined by its pioneers and redefined the whole traditional media system.

On the one hand, the completion of technological convergence[3] took place with the digitization of discography, cinema, radio and television, journalism and book publishing. The web on the one hand, and apps on the other, have enabled the online reception of content that – until a decade ago – was still provided by legacy media. This migration has fostered the definitive welding of media and telecommunications, and network infrastructures have become distribution channels for all kinds of content. On the other hand, digitization has started to use on a mass scale a tool belonging to the history of computer science, which until then had remained in the background of research in its most advanced and elite forms: artificial intelligence. The so-called web 2.0 is in fact based on the functioning of algorithms, and on their ability to read the behaviour of users. As van Dijck, Poell and de Waal write, a platform (like Facebook, Airbnb or Uber) "is a programmable architecture designed to organise interactions between users".[4] This feature has shown itself very well in social media which, as Graham Meikle points out, are 'platforms made up of networked databases that combine public and private communication'.[5]

In the first twenty years of the third millennium, there has thus been a transformation of the media ecosystem that has to do not only with technology and its evolution, but more fundamentally with a process involving all dimensions of society. Indeed, the platforms constitute a break with previous media waves, starting with their economic dimension. Amazon, Alphabet, Facebook, Apple and Microsoft now occupy the absolute first places in terms of turnover among all companies in the world and, like monopsonies, tend to expand more and more, limiting or absorbing the competition with a force never known before on a global scale. This is an absolute novelty, given that traditional media – even those of significant size, capable of encompassing different elements of the supply chain, from the conception and production of content to its distribution – have always been limited in size compared to the large industrial giants (e.g. the oil industry).

[3] H. Jenkins, *Convergence Culture: Where Old and New Media Collide*, New York, NYU Press 2008.

[4] J., van Dijck, T. Poell, M. de Waal, *The Platform Society. Public Values in a Connective World*, Oxford, Oxford University Press 2018.

[5] G. Meikle, *Social Media. Communication, Sharing and Visibility*, London, Routledge 2016.

The very nature of platforms tends to make them move in the direction of an expansion that aspires to a monopoly in the intermediation of consumption (what is precisely defined as a monopsony, which is elusive with respect to traditional antitrust legislation), and pushes them to expand to new frontiers (e.g. Amazon has gradually extended its functions from home delivery to other sectors such as the production and distribution of videos).

The success of platforms has been studied extensively, to the extent that it is possible to observe their constituent elements: they invest little in the assets of traditional companies; the use of user data allows both a continuous improvement in performance and the transformation of that data into economic value through algorithms. Algorithms, whose novelty and opacity with respect to democratic control have been recalled by several authors, have enabled new offers in the field of traditional entertainment and information, responding to logics that are profoundly different from those of analogue media.[6]

However, a pure analysis of technologies – in their current sophistication – is insufficient to grasp the scope of the media ecosystem, which is connected to a wider context, in which certain transformations in the social and political dimension, as well as in the economic one, are evident. If we look at the more general social context, we can see the links, or at least the intersections, between the development of the media system and the development of some economic ideology.

Let us begin with the role played by 'neo-liberal thinking' in governmentality since the 1980s. The connotations and complexities of neo-liberalism have been described, for example, by Mudge in his 2008 essay:[7] neo-liberalism welds the academic conceptions of the supporters of the free market and monetarism with economic practices that emphasize the role of financial capital while progressively diminishing the role of labor; the aim of reducing the role of the state in governance in the name of market supremacy with policies of privatization, liberalization, deregulation, depoliticization. There is no doubt that in the decade after the 2008 crisis

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[6] The literature on the subject is now very extensive. By way of example, I would like to mention the following: C. Fuchs, *Culture and Economy in the Age of Social Media*, London, Routledge 2015; R.H., McChesney, *Digital Disconnect. How Capitalism is Turning the Internet Against Democracy*, New York: New Press, 2013; S. Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*, New York, Public Affairs 2019.

[7] S.L. Mudge, "What is Neoliberalism?", *Socio-Economic Review*, Vol. 6, Issue 4, 2008, 703-731.

and before the pandemic, the cultural/political/economic patchwork of neo-liberalism was strengthened. Regarding platforms and their rise, many recent histories of the net show the links between the business philosophies of big companies and an ultra-liberal philosophy.[8] Not only does the business mechanism of the platforms recall the accentuation of the traits of capitalism in its most recent forms; but the very conception of users, the kind of culture that is proposed to them by making sharing technologies available, is largely inspired by liberal individualism:

> Web 2.0 is a neoliberal technology of subjectivity that teaches users how to succeed in postmodern American consumer capitalism. Social media not only demonstrates the lessons of white-collar business success by rewarding flexibility, entrepreneurialism, and risk-taking; it also provides a blueprint of how to prosper in a society where status is predicated on the cultural logic of celebrity, according to which the higher value is given to mediation, visibility, and attention. That is, the technical affordances of social media reward with higher social status the uses of behaviors and self-presentation strategies that make people look.[9]

Another fundamental aspect of the context of the rise of the platforms is the growing inequality between nations, social classes and people, which has been exacerbated by neo-liberal policies, and which has found in the platforms business subjectivities capable of taking full advantage of the new market conditions and its governance. It is no coincidence that, for the first time in history, the world's economic supremacy belongs largely to the large platforms (something that never happened even during the most fortunate phases of the big media majors). A clear demonstration of this is the ranking of the companies with the highest revenues in the world (see Table 1).

We can say that – with their tendency towards concentration and monopsony – platforms give substance to the idea of the absence of regulation.

Another aspect of the growth of platforms is the link with the advance of populism: the phenomenon has grown progressively over the last decade, and has been accompanied by a change of some traditional democracies into illiberal democracies, as shown in the Table 2.

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[8] See for instance B. McCullough, *How the Internet Happened: From Netscape to the iPhone*, London, Norton 2018.

[9] A. Marwick, *Status Update: Celebrity, Publicity & Branding in the Social Media Age*, New Haven (CT), Yale University Press 2013, 14.

Concentration of wealth: 1. Dimensions of the platforms

Company	Rank 2021	Rank 2020	Market Value (Billion USD)	
Apple	1	2	2256.000	↑ ↑
Saudi Aramco	2	1	2051.500	↑
Microsoft Corporation	3	3	1682.000	↑
Amazon.com	4	5	1634.000	↑ ↑
Alphabet	5	4	1185.000	↑
Facebook	6	6	778.040	↑
Tencent	7	9	697.260	↑
Tesla	8	144	668.900	↑ ↑ ↑ ↑
Alibaba Group Holding	9	7	648.320	↑
Berkshire Hathaway	10	8	543.680	↓

World Top 1000 Companies List and World Ranks (2021)
Source: https://www.value.today/

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Table 1.

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Global Democracy Index 2020

Authoritarian regimes — Hybrid regimes — Flawed democracies — Full democracies
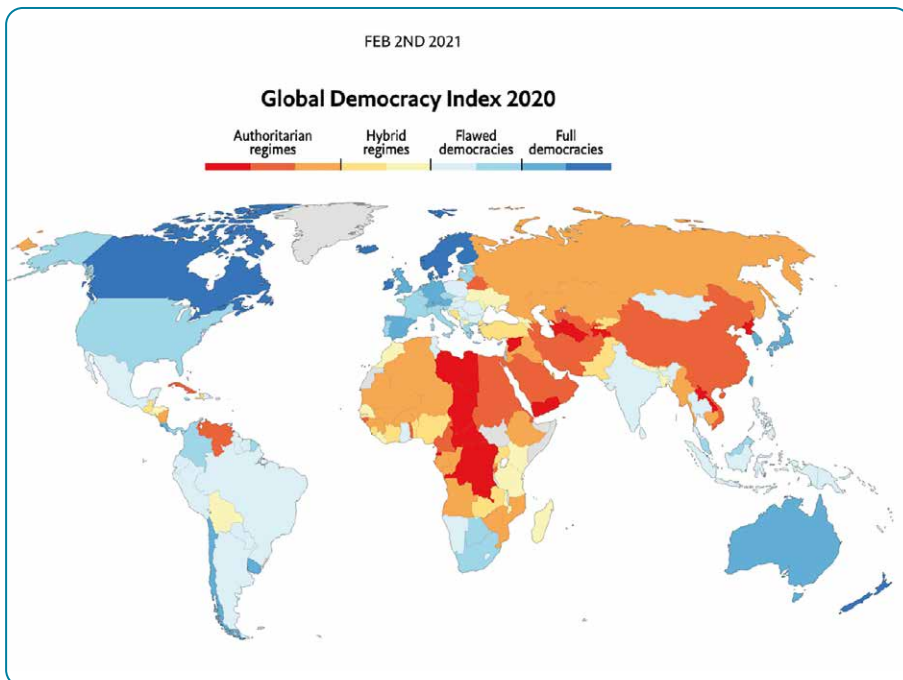
Table 2. Source: *The Economist*, Global Democracy Index 2020.

We are also well aware of how a certain conception of data collection about users has recently been (legally and non-legally) used by populists in several European countries. The cases of the link between the rise of Donald Trump or the successful pro-Brexit campaign and the use (legal and illegal) of social media such as Facebook and Twitter are well known. In Italy, the Lega, a nationally important party that is now in government, uses its own algorithm, called *the Beast*, to exploit social media databases in order to improve its political and electoral communication.[10]

During the years immediately preceding the pandemic, there was growing alarm, in particular towards what we might call the symbolic pollution of the public sphere. The phase of enthusiasm for the access of hundreds of millions of people to the net through social media and the growing diffusion of smartphones was gradually succeeded by an atmosphere of growing concern. Contrary to the utopias of the early founders of the net, who envisioned a democracy without territory, in which all citizens would be able to contribute equally to the well-being of all, or to Berners Lee's dream of a 'republic of knowledge' mainly inhabited by scientists and intellectuals, the network based on large platforms has highlighted not only the options for social control allowed by algorithms, but also the visible spread of anti-social behaviours such as spreading fake news, bullying or hate speech. The progressive discovery of these limits has led to two types of critical theories: on the one hand, those that – recalling a famous definition by Umberto Eco – we could call apocalyptic,[11] and which are based on a 'theory of effects'. It would be the network itself, with its intrinsic mechanisms (power law, the role of influencers, the full exploitation of "mass naivety") that would generate the spread of aberrant behaviors and the "pollution" of the symbolic sphere. On the other hand, we find theorists who link the specific operating mechanism of platforms, with its links to neo-liberal ideology, to the exacerbation of the phenomena of hate speech and fake truth due to the inevitable creation of echo-chambers and filter bubbles. Among these, as we have seen, some have linked their critical vision to certain classical critical or political theories, from traditional Marxism to the criticism of the mainstream or cargo cult, up to the elitist positions adopted between the 19th and 20th centuries by some critics of mass society. For several years this alarm has been growing among intellectuals and civil

[10] For an analysis of this phenomenon, I refer to my *Ecologia dei media*, cit.
[11] A good example of these interpretative positions is N. Carr, *The Shallows: What the Internet Is Doing to Our Brains*, New York, W.W. Norton & Co. 2010.

society. But only recently, due to some macroscopic phenomena and also to the spread of the pandemic, have states and national and supranational institutions themselves begun to adopt policies inspired by this critical attitude, so much so that it is possible to speak of a new phase in the ecological policy of platforms.

2. The media ecosystem during the pandemic

We now come to the analysis of the short-term factors which, together with the pandemic outbreak, have generated a decisive shift. There is no doubt that phenomena such as Brexit or the election of Donald Trump as US president have not only generated a historical change, but also provoked reactions that the pandemic has only accelerated. In order to understand this point, we need to go back to the idea of the 'pollution of the public sphere' that various theorists had developed, and which seemed to be confirmed by the Cambridge Analytica scandal, which confirmed the links between social platforms, their possible infiltration by lobbies, political parties and movements, strategic disinformation linked to populist or otherwise anti-Western powers, and so on. My thesis is that these traumatic events have 'reacted' with the slow elaboration by institutions and civil society, especially in the West, of strategies to contain the overwhelming power of the platforms and the behavior considered most negative on the web.

On the other hand, for the social platforms themselves it has been increasingly difficult to define their role. The Facebook group, for instance, after having defended its neutrality with regard to content for more than a decade, categorically refusing to play the role of media company, has gradually admitted at least partially its social responsibility,[12] taking action to contain hate speech and political extremism. This has not prevented the group from being criticized for its role in polluting the public sphere,[13] but it is an important sign of a certain ability to negotiate with the institutions' requests for more correct communication, less infiltrated by fake news, more polite and less aggressive.

Many a government has begun to design or develop policies to counter both the excesses of liberalism, and the spread of incivility, deregulation

[12] F. Colombo, M.F. Murru, S. Tosoni, "The Post-Intermediation of Truth. News-making from Media Companies to Platforms", *Comunicazioni Sociali. Journal of Media, Performing Arts and Cultural Studies*, 3, 2017, 448-461.

[13] See for instance S. Rathjea, J.J. Van Bavelb, S. van der Lindena, "Out-group animosity drives engagement on social media", *PNAS*, Vol. 118.

and the growth of inequality. We can interpret the course of the European elections and the election of Joe Biden as signs in this direction. As is well known, during the storming of the Capitol in Washington, platforms and mainstream media severely censured outgoing President Donald Trump, accusing him of using his accounts and communication channels in general to spread fake news and incite violence. More generally, the attitude of social platforms has rapidly changed, partly due to increasing interaction with government authorities and state policies. During the Covid-19 pandemic, for example, agreements were made and publicized to contain fake news, which was seen as a challenge within the challenge of the pandemic.

A significant example of these new policies is the WHO document of September 2020, which well defines this new approach:[14]

> The Coronavirus disease (Covid-19) is the first pandemic in history in which technology and social media are being used on a massive scale to keep people safe, informed, productive and connected. At the same time, the technology we rely on to keep connected and informed is enabling and amplifying an infodemic that continues to undermine the global response and jeopardizes measures to control the pandemic.

> An infodemic is an overabundance of information, both online and offline. It includes deliberate attempts to disseminate wrong information to undermine the public health response and advance alternative agendas of groups or individuals. Mis- and disinformation can be harmful to people's physical and mental health; increase stigmatization; threaten precious health gains; and lead to poor observance of public health measures, thus reducing their effectiveness and endangering countries' ability to stop the pandemic.

> Misinformation costs lives. Without the appropriate trust and correct information, diagnostic tests go unused, immunization campaigns (or campaigns to promote effective vaccines) will not meet their targets, and the virus will continue to thrive.

> (...) At the World Health Assembly in May 2020, WHO Member States passed Resolution WHA73.1 on the Covid-19 response. The Resolution recognizes that managing the infodemic is a critical part of controlling the Covid-19 pandemic: it calls on Member States to

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[14] WHO, https://www.who.int/news/item/23-09-2020-managing-the-covid-19-infodemic-promoting-healthy-behaviours-and-mitigating-the-harm-from-misinformation-and-disinformation

provide reliable Covid-19 content, take measures to counter mis- and disinformation and leverage digital technologies across the response. The Resolution also calls on international organizations to address mis- and disinformation in the digital sphere, work to prevent harmful cyber activities undermining the health response and support the provision of science-based data to the public.

(…) We call on Member States to develop and implement action plans to manage the infodemic by promoting the timely dissemination of accurate information, based on science and evidence, to all communities, and in particular high-risk groups; and preventing the spread, and combating, mis- and disinformation while respecting freedom of expression.

(…) We further call on all other stakeholders – including the media and social media platforms through which mis- and disinformation are disseminated, researchers and technologists who can design and build effective strategies and tools to respond to the infodemic, civil society leaders and influencers – to collaborate with the UN system, with Member States and with each other, and to further strengthen their actions to disseminate accurate information and prevent the spread of mis- and disinformation.

In this complex document we can find three main elements to point out: the acknowledgement of the 'environmental' consequences of the infodemic, which are homologated to the health consequences of the pandemic in the strict sense; the role of co-responsibility of the media and platforms, together with that of institutions and citizens, in combating the negative consequences of the infodemic; and the explicit call to action by the media and platforms.[15]

It should be noted that social platforms have responded to the call for co-responsibility with a fairly effective action of contrast and limitation, which contradicts the traditional prudence of social media to behave as publishers, and therefore to take responsibility for content published by users of different natures in the name of freedom of expression. In my opinion, this gradual subsidence of platforms is due to the convergence of different political/economic and cultural pressures. On the political/economic level, the problems exacerbated by the pandemic have certainly accelerated certain regulatory trends, which aim to limit the tax privileges of

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[15] For an analysis of WHO documents in relation to infodemics, see my paper "Infodemic, pandemic, and Covid-19: an ecological approach", forthcoming.

platforms (as in the case of the minimum tax agreed upon by the OCSE). On the other hand, regulatory interventions on the working conditions of employees, especially in the field of delivery, also show that certain conditions favorable to platforms and their business models are now being challenged. The same ultra-liberal philosophy that inspired and benefited them has been challenged by the need for massive state intervention in the economy, opening the way to a season of new public intervention in the economy. The at least provisional crisis of neo-liberalism has also been accompanied by a slowdown in the success of populist parties, in the USA and in Europe. The last European elections in fact marked the substantial victory of the pro-European forces, represented today by the highest offices of the Council and the European Parliament. There is no need to add that the victory in the US presidential elections of Joe Biden, representing a policy linked to more traditional values and instances than Donald Trump, is a further sign in this sense.

At the cultural level, the increasingly justified criticism of scholars, which has come to the attention of governments, is compounded on the one hand by the growing attention of the media to cases of hate speech, bullying and fake news, and on the other by the growing attention of civil society, which is intervening with its own instruments (associations, initiatives, awareness-raising actions) to raise attention to what we might call the pollution of the public sphere. I would like to devote the last part of this article to the mixed strategies of political institutions and civil society.

3. The ecological focus on communication and its contradictions

We have seen how the pandemic season, in line with other processes taking place especially in Western democracies, has changed the political and cultural scenario, impacting on the attention to platforms, which has become increasingly critical, and more oriented towards processes of regulation and governance.

On a political level, this kind of attitude naturally leads to a rethinking of freedom of expression, and finds – especially in the second half of 2021, when the pandemic seems to be receding under the blows of vaccinations and thanks to the use of systems to verify access to workplaces and entertainment to only the immunized or immune – some discordant voices fearing the establishment of new totalitarianisms or new systems of discrimination. One example of this is the document published by two Italian philosophers, Massimo Cacciari and Giorgio Agamben, which has

provoked much discussion and some abjuration in the world of Italian intellectuals.[16]

I do not wish to discuss here, however, the important political issue of the conflict between the duty of care and the right to choose a treatment, which seems to influence the strictly political debate and the political-ideological conflicts in my country, for example. Instead, I would like to focus on the cultural attitudes of civil society that are more attentive to depolluting the public sphere from the negative tensions constituted by

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[16] Qui la traduzione del documento, disponibile in italiano sul sito https://www.iisf.it/index.php/progetti/diario-della-crisi/massimo-cacciari-giorgio-agamben-a-proposito-del-decreto-sul-green-pass.html:

About the green pass decree – Discrimination against a category of people, who automatically become second-class citizens, is in itself a very serious matter, the consequences of which can be dramatic for democratic life. It is being dealt with, with the so-called green pass, with unconscious levity. Every despotic regime has always operated through practices of discrimination, which may have been contained at first but then spread. It is no coincidence that in China they say they want to continue with tracking and monitoring even after the pandemic is over. And it is worth remembering the 'internal passport' that citizens of the Soviet Union had to show to the authorities for every trip. A politician who goes so far as to address those who do not vaccinate using a fascist jargon as "we will purge them with the green pass" is really to be feared to be already beyond any constitutional guarantee. Woe betide if the vaccine turns into a kind of religious-political symbol. This would not only represent an intolerable anti-democratic drift, but would also run counter to scientific evidence itself. Nobody is inviting people not to get vaccinated! It is one thing to argue that the vaccine is useful, but it is quite another to ignore the fact that we are still in a phase of 'mass experimentation' and that the scientific debate on many fundamental aspects of the problem is completely open. The Official Journal of the European Parliament of 15 June clearly states that 'direct or indirect discrimination against people who are not vaccinated, including those who have chosen not to be vaccinated, must be avoided'. And how could it be otherwise? The vaccinated not only can infect, but can still get sick: in England, out of 117 new deaths, 50 had received the double dose. In Israel, it is estimated that the vaccine covers 64% of those who have received it. The pharmaceutical companies themselves have officially stated that it is not possible to predict the long-term damage of the vaccine, as they have not had time to carry out all the genotoxicity and carcinogenicity tests. *Nature* has calculated that it will still be physiological that 15% of the population will not take the vaccine. So how long are we going to have to stick with the pass? Everyone is threatened by discriminatory practices. Paradoxically, those 'enabled' by the green pass are more so than the non-vaccinated (whom regime propaganda would like to pass off as 'enemies of science' and perhaps proponents of magical practices), since all their movements would be controlled and it would never be possible to find out how and by whom. The need to discriminate is as old as society, and was certainly already present in ours, but to make it law today is something that the democratic conscience cannot accept and against which it must immediately react.

fake news and hate speech. These attempts, which have accompanied the birth and development of the web, seem to need a general philosophical foundation, a definition of communication that justifies them and explains their legitimacy.

I will take as an example *Parole Ostili*, the movement/association that in recent years has set up a major project to promote correct online behavior and is working (with the resources of education in schools, the interest and commitment of many intellectuals, and also with the involvement of institutions) to raise awareness against the misuse of communication on the net and in favor of what I would like to call 'gentle communication', that is, sensitive to the humanity of the other and to the principle of mutual recognition in relations with interlocutors. *Parole Ostili* has published a manifesto,[17] articulated in a decalogue, suggesting 'rules' for correct communication behavior:

1. **Virtual is real**
   On the Internet, I only write or say what I would dare to say in person.

2. **You are what you communicate**
   The words I choose define who I am. They represent me.

3. **Words shape the way you think**
   I take all the time I need to express my views in the best possible way.

4. **Listen before you speak**
   No one is always right, and neither am I. I listen, with an honest and open-minded attitude.

5. **Words are bridges**
   I choose words to understand, make myself understood and get close to others.

6. **Words have consequences**
   I am aware that what I say or write can have consequences, small or serious.

7. **Share with care**
   I share texts and images only after I have read, assessed and understood them.

8. **Ideas can be discussed. People must be respected**
   Those whose views and opinions differ from mine are not enemies to be destroyed.

9. **An insult is not an argument**
   I do not accept offensive and aggressive words, even if they support my point of view.

10. **Silence says something too**
    When it's better to keep quiet… I do.

[17] https://paroleostili.it/en/

The manifesto was then declined in other decalogues, applicable to specific areas of particularly 'sensitive' communication, such as politics, sport and corporate communication.

It is worth giving some thought to an initiative like this. It is based on two prerequisites: the first is that online behavior must be firmly anchored in the rules of good manners valid in the offline world. The second prerequisite is the idea that the rules of online communication must be based on the defense of the quality of communication itself, and that every 'incorrect' behavior risks not only affecting or damaging the people to whom insults are addressed or who are victims of deception, but more generally destroying the very context of any possible interaction.

For this second prerequisite, *Parole Ostili* owes much to the netiquette practices that have always accompanied online conversations, and which – after a long learning practice that accompanied the development of interactions on the first newsgroups – were codified in 1995 in a document of the Network Working Group22, entitled *Netiquette – Reference Guide*, from which we can draw some very interesting indications. In the Introduction we read:

> In the past, the population of people using the Internet had "grown up" with the Internet, were technically minded, and understood the nature of the transport and the protocols. Today, the community of Internet users includes people who are new to the environment. These "Newbies" are unfamiliar with the culture and don't need to know about transport and protocols. In order to bring these new users into the Internet culture quickly, this Guide offers a minimum set of behaviors which organizations and individuals may take and adapt for their own use.

The recommendations of the netiquette guide can be divided into three main lines. The first line concerns the explanation of the technological or conversational possibilities that the network offers, for example the distinction between a two-way conversation (as in the exchange of emails) and a group conversation. The second line illustrates some elementary rules of network literacy such as: "do not use the 'reply to all' function to send a message intended only for the sender"; "do not use capital letters because capital letters in network messages mean a shout", and so on. The third line of suggestions is in a different perspective, which promotes 'socially acceptable' behavior that refers to a certain general idea of fairness in communication. Here are two very clear examples of instructions belonging to this line:

> A good rule of thumb: Be conservative in what you send and liberal in what you receive. You should not send heated messages (we call

these "flames") even if you are provoked. On the other hand, you shouldn't be surprised if you get flamed and it's prudent not to respond to flames.

Remember that the recipient is a human being whose culture, language, and humor have different points of reference from your own. Remember that date formats, measurements, and idioms may not travel well. Be especially careful with sarcasm.

Both these examples refer to an implicit idea of interaction in general terms, which netiquette tends to defend as 'good communication'. Even if the source of legitimacy changes (in the first two lines the 'alphabetic' awareness of online language, in the third the appropriateness to general principles of communication between people), the reason why the rules are promoted does not change. It consists in the idea of 'saving the conversation', because just as it is difficult to converse with someone who does not use language and rhetorical forms correctly, so it is impossible to continue an interaction polluted, for instance, by one or more trolls who attack users, multiply their nicknames, and respond obsessively to all replies.

To summarize, we can say that netiquette shows very clearly how – since the birth of online conversations (be they one-to-one, one-to-many or many-to-many) – the problem of the correct use of words, expressions and communicative attitudes has been posed. All the rules are presented as communitarian (i.e. self-formulated by online communities and in particular by their most experienced and credible representatives), progressive (in the sense that they develop and grow with the complexification of online activities) and aimed at the optimal functioning of the conversations themselves (i.e. their rationale consists in the survival of the communities and the communicative acts to which they give rise).

If users do not follow certain rules, in short, the conversation tends to die and die out. A sort of Kantian imperative could be applied to netiquette: make your communicative actions protect the interaction you are participating in.

This logic (still active even in some recent texts on the 'imperatives' of communication),[18] closely resembles some theories of communication norms based on the need to keep the conversation itself alive.

[18] See for instance S. Nossel, *Dare to speak. Defending free speech for all*, New York, HarperCollins 2020.

For instance, Robin Lakoff, in a 1973 contribution,[19] analyzed and systematized the so-called 'rules of politeness' in interaction between individuals. Later, she summarized her findings on the topic by defining politeness as a system of interpersonal relations that facilitate interaction by minimizing conflicts and arguments potentially present in every human exchange. The implicit rules of politeness identified by Lakoff aim at minimizing friction between speakers, and thus the pleasantness of the communicative exchange.

The search for the foundation of conversation is instead the step attempted by Paul Grice, an English analytical philosopher, according to whom the good functioning of the communicative exchange does not depend only on courtesy, but deeper on the honesty of the speakers in contributing to the positive outcome. Grice[20] identifies four fundamental 'maxims' (quantity, quality, relationship and modality) which, in his view, enable fruitful exchange and cognitive enrichment, and which are implicit in our ability to communicate.

Grice's maxims, unlike Lakoff's rules, seem to go beyond mere formal courtesy between interlocutors to achieve the goal of sharing information and experience. The success of the relationship depends not only on the renunciation of violence or prevarication, but also on the sharing of valid content and knowledge, on mutual enrichment.

A further step forward seems to me to be that taken by Jürgen Habermas in his *Theory of Communicative Action*, first published in 1981.[21] For the German philosopher there are four types of acting: the teleological one, aimed at obtaining a result in the context of the physical world (Habermas speaks of a "world of existing states of affairs"); the norm-regulated one, in which the actor orientates himself according to the common values of the community to which he belongs; the dramaturgical one, in which the participating subjects "mutually represent something" (essentially acting together as actors and as an audience); and the properly communicative one, in which two or more subjects interact through

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[19] R. Lakoff, *The Logic of Politeness; or, Minding your P's and Q's*, in C. Corum – T. Cedric Smith-Stark – A. Weiser (eds.), *Papers from the 9th Regional Meeting of the Chicago Linguistic Society*, Chicago, Chicago Linguistic Society, 1973, 292-305.

[20] P. Grice, "Logic and Conversation", in *Syntax and semantics 3: Speech arts,* Cole et al. "Logic and conversation", pp. 41-58, (1975), reprinted in: https://d1wqtxts1xzle7.cloudfront.net/52084711/Grice-Logic-with-cover-page-v2.pdf

[21] English Translation, J. Habermas, *The Theory of Communicative Action* (2 vol), Boston, Beacon Press 1981.

language or other types of signs establishing an interpersonal relationship. It is clear that, for Habermas, communicative acting is a sort of high synthesis of the other forms of acting, because the establishment of a correct communicative relationship makes it possible to act profitably in the world, to share norms of behavior, and to represent each other in a balanced way. And yet the most interesting point is the assertion that not all communication between subjects authentically responds to the logic of communicative action. This logic, in fact, requires consideration of the other's point of view and a common orientation towards agreement, particularly of a rational kind. But, if one of the subjects communicates with his own exclusive aims, which do not coincide at all with those of the interlocutor and are not shared by him, the action of the first subject is defined by Habermas as strategic, that is, aimed instrumentally at obtaining consent, with indifference to the (possibly negative) consequences for the second subject.

This point constitutes, in my opinion, Habermas's main acquisition: when he talks about the risks of a communication transformed into strategic acting, the German philosopher is suggesting that a distinction between 'good' and 'bad' communication is possible. More: without this distinction it is almost impossible to formulate a critique of propaganda, mass falsehood and – coming to the present day – even of a public sphere pollution. In the same decade in which Lakoff, Grice and Habermas were conducting their search for universal norms of communication, the German philosopher Josef Pieper was carrying out an accurate analysis of propaganda itself, resorting to the roots that link it to the history of ancient philosophy.[22] Plato, Pieper observes, called the Sophists (known to be his and his teacher Socrates' bitter enemies) 'corrupters of the word'.

> But what does corruption of the word mean? (…) The conquest of human speech and language – so Plato would undoubtedly answer (…) – is always twofold, which is why it must be assumed from the outset that speech can equally corrupt or be corrupted in two different ways. The first concerns the fact that, in speech, reality emerges in its clarity. One speaks in order to make something real knowable through its designation. Knowable for someone, obviously; and this represents the second aspect, the communicative character of

[22] J. Pieper, *Ostfildern, Missbraucht der Sprache – Missbraucht der Macht*, Schwabenverlag 2000. The English translation, from the Italian version, is mine.

> language. (...) Thus, the corruption of the reference to reality and the corruption of the communicative character are clearly the two possible forms of corruption of the word. And indeed, they are precisely those that Socrates imputes to the Sophist rhetoric as the art of discourse.

Following the Socratic–Platonic thread, Pieper asserts that anyone who speaks to another by consciously manipulating the word and not caring about the truth ceases to consider the other as an interlocutor, and indeed 'no longer considers him as a human being'. Corruption and abuse of language thus enter the service of tyranny, under the familiar banner of propaganda. In commercial propaganda (advertising) as in political propaganda – Pieper continues – the recipients 'are not taken into account as human beings', but only as potential consumers or supporters/electors:

> Propaganda is by no means just an administrative act of an authoritarian state. It is present wherever a power group, an ideological clan, a collective of interested parties, a pressure group uses the word as a 'weapon'. And of course the threat can mean much more than political persecution. In particular, it can mean all forms and degrees of defamation, public derision, social exclusion, since all this happens in linguistic ways, including through the unspoken word.

Pieper, therefore, once again defines the axis around which every hypothesis of the foundation of communication cannot but revolve: the idea of a sharing between people oriented to the good of both, and therefore to the effort of correct representation of facts and the world. Aggression and lies are, in short, two faces of the same betrayal: that of the profoundly human nature of communicative exchange. And this is, after all, the basis of any attempt to identify rules that distinguish and enable good communication to be produced.

As we can see, any attempt to defend good communication – be it linked to an agency or a theorisation – refers on the one hand to a self-defence mechanism of communication itself (any action that risks interrupting the communicative relationship therefore has a negative value); on the other hand to an intrinsic value of communication as a human activity (whereby using communication to harm, hurt or offend the other does not respond to the human root of communication itself). It is particularly on this last aspect that I would like to conclude, showing how an ecology of the media is only possible within a more general ecology of human communication.

4. Conclusions

Let us summarize the path taken so far and propose a re-reading in terms of the ecology of communication today.

We have detected a progressive tendency – which has recently exploded, due to both medium-term geopolitical factors and the advent of the Covid-19 pandemic – towards an ecological sensitivity in relation to the public sphere. This trend has matured within a media ecosystem dominated by platforms, first in the total absence of opposition from public opinion and governments, then in an increasingly close dialectic with regulatory systems and criticism from civil society. In particular, we focused on the issue of symbolic pollution through the spread of fake news and aggressive behavior such as trolling, hate speech, bullying and discrimination.

However, the new approaches of an ecological nature, both in political and cultural terms, present some theoretically interesting issues. On the political level, the difficulty of mediating between the new tendency to govern and regulate freedom of expression is likely to be a decisive field of investigation and democratic practice in the coming years. On the level of practices of self-government of communication and its spaces by civil society, the big question seems to be: how to define good communication? Why pursue it? Why should each of us avoid being a hater or insulting a participant in our online discussion if we think differently? Why, in short, is it essential to fight to preserve communication as a precious commodity?

The answer I would like to sketch out here is as follows: human communication defines our species, which is completely different from other animal species in the way it communicates. Even as children, even before we are born, we feel the presence of the other. In our mother's womb we receive signals of her moods. We can say that the first communication we receive from the 'other than ourselves' – from the world that welcomes us and awaits us – is a gift, which we receive without merit and without expectations. This original openness to an other (the mother), and to a world into which we come, is then substantiated in life by a profound awareness: that of a species that does not think of itself only in the present, but also in a temporality that transcends its current existence. We are the only species capable of thinking beyond the contingency of the present of individuals, and the transmission from each generation to the following generations, as well as the awareness of the inheritance (in terms of acquired knowledge) received from previous generations, is its defining and constituent element.

Our growing scientific and technical achievements cannot be explained without this basic fact, nor can our curiosity for history, our passion for

classics written centuries ago, or our desire to interpret and imagine a future that will not see us as one of its inhabitants. Communication is not only an instrument of this species instinct, it is also, so to speak, its embodiment, and in this sense it is true that we cannot fail to communicate.

It is fair to say, then, that communication is our first experience as individuals, and also our mandate as members of the species: this gives it a precious value, and its quality is clearly a crucial issue today as in the past.

To defend the environment, we can give up something to save us all. Recovering the original function of communication as a bond means discovering that every misbehavior creates several victims, starting with the one who adopts it.

Losing the root of communication means losing the awareness that is originally given to us: the possibility (at least the possibility) of a personal encounter, of a mutual look of recognition, of a name pronounced with respect and love.

If it all began in the embrace of our mother's body, even before birth, it is nice to imagine that protecting the ecosystem of communication means saving that embrace, that sense of warmth that we can feel in others we meet in their fundamental diversity.

This could mean rediscovering the gentleness of communication: the term refers not only to courteous manners, but more deeply to belonging to a *gens*, a family, and thus to the lineage of all, to that community of destiny that is the whole of humanity. To recall the need for this kindness, I will use the words, not mine, but those of a great Israeli writer, David Grossman. In one of his very short, excruciating stories, a mother pays compliments to her child and at a certain point tells him that she thinks he is unique, different from all the others. The child becomes worried and sad. If I am unique, he argues, I am alone. The woman tries to console him by telling him that this is not the case, that there are always his parents, his father and her, his mother. But the child does not console himself. His mother is also unique and therefore alone. What comfort can she give him? The ending of this story speaks to us of what we can be to each other, if communication is thought of as a bond of openness and not as the narcissistic expression of many lonely individuals, entrusted to the self-generated logic of algorithms and their values.

"Here, take yourself for example. You are unique", explained the mother, "and I am also unique, but if I embrace you, you are no longer alone and I am not alone anymore".

"Then hug me", Ben said, hugging his mother.

She held him close. He felt Ben's heart beat. Ben also felt Mom's heart and hugged her tightly. "Now I'm not alone", he thought as he hugged her, "now I'm not alone. Now I'm not alone".

"See", Mom whispered to him, "that's exactly why they invented the hug".[23]

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[23] D. Grossman (artwork by M. Rovner), *The Hug*, New York, Overlook Press 2013.

Digital Violence: A Threat to Human Dignity, a Challenge to Law

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1. Human dignity

The starting point of my talk is the idea of human dignity which we deem deeply involved in the topic we're going to discuss, namely digital violence. Actually, we think that whenever something negative, harmful is present in a system, the major effort should be devoted not only or not so much to the encroaching variables to be checked, but rather to the positive ones whose enhancement can outweigh and thus drive away the negative ones simply not leaving space to them. Liberty, and also dignity, to be better preserved must be actively affirmed and exerted.

As the anthropologist Gregory Bateson once wrote

> It used to be said that "Nature abhors a vacuum", and indeed something of the sort seems to be true of unused potentiality for change in any biological system. In other words, if a given variable remains too long at some middle value, other variables will encroach upon its freedom, narrowing the tolerance limits until its freedom to move is zero or, more precisely, until any future movement can only be achieved at the price of disturbing the encroaching variables. In other words, the variable which does not change its value becomes *ipso facto* hard programmed. Indeed, this way of stating the genesis of hard-programmed variables is only another way of describing *habit formation*. As a Japanese Zen master once told me, *"To become accustomed to anything is a terrible thing"*. From all of this it follows that to maintain the flexibility of a given variable, either that flexibility must be *exercised,* or the encroaching variables must be directly controlled.[1]

Thus, one possible remedy to the enormous problem of digital abuse should consist in the strengthening, enhancement and protection of human dignity as well as in fostering the awareness of such endowment, in the sense we will try to describe.

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[1] G. Bateson, *Steps to an Ecology of Mind*, Jason Aronson, Northvale, NJ-London, 1987, p. 508.

Pope Francis has referred to human dignity so many times, e.g. in the Apostolic Exhortation *Evangelii Gaudium* human dignity occurs 23 times. But every discourse on human dignity requires some assessment on the meaning of this multifaceted, really spawning idea, which makes up the mainstay of the recognition of human rights in most constitutions.

As stated by Judge Aharon Barak, "human dignity is the humanity of a person as such and, underlying that humanity, is a person's free will and autonomy. It is a person's freedom to write her life story".[2]

However human dignity is a mobile idea, a spawning principle, as said. In its richness, it is clarified and deepened through the understanding stemming from any field of human experience and scholarship, especially whenever these fields can bear witness and denounce negations of the humanity of individuals or groups. As stated once by the international law scholar and judge Antonio Cassese, *ex iniuria, oritur ius*, namely it is drawing on the experience of offences and injustice that law can better define its principles, bound to protect effectively every person, especially the most vulnerable ones.

This perspective of the *homo in vinculis*, the "bonded, jailed man" is extremely thought-provoking to this effect. The mandate, in Italy at least, to criminal justice and punishment to strive for a *possible* rehabilitation of *every* offender is, as such, a development of the same idea of human dignity, as this key principle assumes that *every* individual, whatever crime he/she has committed, simply as a human being, *can* (re)"write his/her story" from the start.

It is just the idea of dignity we received as inheritance from the Renaissance culture. The same idea which inspired the great humanist Giovanni Pico della Mirandola when he described human beings as capable of any metamorphoses, to transform themselves in all conceivable creatures, either animals, or plants, through their ingenious mind and imagination.[3] Moreover, from human beings we can and must thus expect radical discontinuity in the course of their lives and this is the potential of metamorphoses which makes up an essential element of their dignity.

This perspective somewhat even trickles out of recent judgements by the Italian Constitutional Court (e.g. no. 56 of 31/03/2021), where the

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[2] A. Barak, *Human Dignity. The Constitutional Value and the Constitutional Right*, Cambridge U.P., Cambridge, 2015.

[3] G. Pico della Mirandola, *La dignità dell'uomo*, ed. by R. Ebgi, Einaudi, Torino, 2021; E. Wind, *Pagan Mysteries in the Renaissance*, Yale U.P., New Haven, 1958.

openness to future changes of one's own personality (and thus to rehabilitation) is admitted in spite of the criminal category or classification inherent in the charge for which people have been convicted and detained; "the conduct subsequent to the crime committed is projected into the future and can mark a radical discontinuity in the person's attitudes and in his social relationships".

2. Violence and digital violence

Such feature of human dignity should be put to good use while discussing that particular kind of violence which is "digital violence".

Human dignity is offended as such whenever an attack comprehensively besets the humanity of an individual, and I therefore deem that the quintessential offence against human dignity is violence.

As aptly stated in innumerable international and national legal statements, e.g. in the Constitution of Greece (article 7 sub-article (2)): "Torture, any bodily maltreatment, impairment of health, or the use of psychological violence as well as any other offence against human dignity are prohibited and punished as provided by law".[4] And it is worth mentioning article 613-bis of the Italian criminal code punishing that kind of extreme violence which is torture, also defined as consisting in behaviours "involving an inhuman and degrading treatment for the dignity of the person". This article complies, at least in part, with the 1984 United Nations *Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment*, which has affirmed that "equal and inalienable rights of all members of the human family", namely "the foundation of freedom, justice and peace in the world", "derive from the inherent dignity of the human person".

If violence is perhaps the most visible and clear-cut aggression upon human dignity, digital violence, albeit not carried out through physical means and not being strictly an "attack to the body", as violence is construed,[5] makes no exception.

This kind of violence has been defined as "discrimination, harassment and hate on the Web including flaming, trolling, misogyny, racism and Islamophobia".[6]

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[4] Barak, *op. cit.*, p. 55.
[5] A. Ceretti, L. Natali, *Cosmologie violente. Percorsi di vite criminali,* Raffaello Cortina, Milano, 2009.
[6] K. Lumsden, E. Harmer, *Exploring Digital Violence and Discrimination on the Web*, Palgrave Macmillan, London, 2019, p. 1.

It apparently includes the hate speech which, according to the UNO definition,[7] is "any kind of communication in speech, writing or behaviour, that attacks or uses pejorative or discriminatory language with reference to a person or a group on the basis of who they are, in other words, based on their religion, ethnicity, nationality, race, colour, descent, gender or other identity factor".

I would also quote from the Additional Protocol to the Convention on Cybercrime (2003), which defines as "racist and xenophobic material" "any written material, any image or any other representation of ideas or theories, which advocates, promotes or incites hatred, discrimination or violence, against any individual or group of individuals, based on race, colour, descent or national or ethnic origin, as well as religion if used as a pretext for any of these factors".[8]Although hate speech and *ad personam* forms of hatred already existed before the diffusion of new digital technologies and continue to exist even offline, a few features of the web and social media platforms, such as their diffusivity and "permanency", amplify their harmful consequences.[9] Moreover, the possibility of acting anonymously fosters mechanisms of "toxic disinhibition"[10] and the immediacy of online interactions does not stimulate web users to think enough before taking action.[11]In addition, we should be aware that before any single attack or *actus reus* is committed on the web, a kind of subtle and quite obnoxious violence is just inherent, even ubiquitous in the current digital environment, in the infosphere.[12] It may be called "algorithm violence" and has two relevant features, partially connected to each other.

On the one hand, numerous studies attest that the algorithms that govern the logic of visibility of the contents on the network favour and amplify digital violence. Actually, the automated processes of indexing content based on user profiling contribute to viralization, as well as to the trivialization of offensive contents. The posts containing incitement to violence

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[7] *UN Strategy and Plan of Action on Hate Speech*, 18 June 2019, www.un.org

[8] Council of Europe, *Additional Protocol to the Convention on Cybercrime, concerning the criminalisation of acts of a racist and xenophobic nature committed through computer systems*, Strasbourg, 28 January 2003.

[9] UNESCO, *Countering Online Hate Speech*, Paris, 2015; B. Perry, P. Olsson*, Cyberhate:* The Globalization of Hate, in *Info. & Comm. Tech. L.*, 18 (2008), pp. 185 *et seq.*

[10] See P. Wallace, *The Psychology of the Internet*, Cambridge U.P., Cambridge, 2016.

[11] See D. Kahneman, *Thinking, Fast and Slow*, Penguins Books, New York, 2011.

[12] L. Floridi, Ethics in the Infosphere, in *The Philosophers' Magazine*, 16 (2001), pp. 18–19.

and discrimination, intimidation and denigration, as intrinsically sensationalist, in fact risk activating the selective function of digital platforms, thus increasing the number of users and therefore the likelihood that they will be further appreciated and shared.[13] While contributing to the "media success" of such contents, they also support the mechanisms of moral disengagement, and in particular the so-called spread of responsibility: the more likes and shares a post gains, the less the user feels "responsible" for appreciating or sharing it in turn, thus contributing to the "normalization" of digital violence: the more frequently hateful contents appear, the greater the effects of the user's addiction to verbal violence.[14] On the other hand, but I would say primarily, the handling of algorithms based on user profiling hinders effective pluralism and therefore the freedom of expression and the "full development of the human person" (as stated in the Italian Constitution).

As experts explain, the user finds himself in a sort of self-referential bubble, defined as a "filter bubble", or, according to another quite revealing metaphor, in an "echo chamber", that is, in a virtual space where the opinions he has already expressed or theories he has searched or shared are echoed. In this way, haters and conspiracy theorists' rejection of fact-checking is facilitated by the scarcity of alternative content they can encounter and their delusional beliefs are strengthened and confirmed.[15]

In this sense new technologies, and especially the Internet, help people to listen to the opinions of other individuals of the same mindset and to isolate themselves from different ideas, thereby creating a fertile ground for polarization.[16] All these features somewhat seem to resemble in the digital era what P. Bourdieu[17] already remarked about television many years ago,

[13] See S. Pasta, *Razzismi 2.0. Analisi socio-educativa dell'odio* online, Morcelliana, Brescia, 2018; M. Mensi, P. Falletta, *Il diritto del* Web, Cedam, Padova, 2018; M. Santerini, *La mente ostile: forme dell'odio contemporanea*, Raffaello Cortina, Milano, 2021.

[14] A. Bandura, *Moral Disengagement: How People do Harm and Live with Themselves*, Worth Publishers, New York, 2015; Id., Failures in Self-Regulation: Energy Depletion or Selective Disengagement? in *Psychological Inquiry*, 7 (1996), pp. 20-24. See also S.U. Noble, *Algorithms of Oppression: How Search Engines Reinforce Racism*, New York U.P., New York, 2018.

[15] E. Pariser, *Filter Bubble: How the New Personalized Web Is Changing What We Read and How We Think*, Penguin Press, New York, 2011.

[16] C. Sunstein, *Republic.com*, Princeton U.P., Princeton, 2001. See also M. Castells, *Communication Power*, Oxford U.P., Oxford, 2013.

[17] P. Bordieu, *Sur la télévision; suivi de l'emprise du journalisme*, Éditions Liber, Paris, 1996.

namely the might of these media of enclosing consumers within a "cognitive cage" whose bars are made either of commonplaces or of iconic impressive messages which replicate at high rate and spellbind audiences.

In this constrictive power lies the prime threat to human dignity which is effected before and apart from any specific violent or hate content, and is just the pinning of people to an everlasting "confirmation bias"[18] and thus the binding of them to the burden of their current or past views and tastes.[19] This binding force seriously thwarts the ability of people to change their minds, to look at the world with different eyes, to effect a "radical discontinuity in the course of their lives". Briefly: to cherish those attitudes which are the prerequisite for creativity and, I dare to say, for a satisfying even happy life.

In this regard, the European Fundamental Rights Agency (FRA), in the manual *Preventing unlawful profiling today and in the future: a guide* (2018), focuses on the risks for human rights that the profiling activities carried out by the control agencies entail. Profiling is defined as "any form of automated processing of personal data consisting of the use of personal data to evaluate certain personal aspects relating to a natural person, in particular to analyse or predict aspects concerning that natural person's performance at work, economic situation, health, personal preferences, interests, reliability, behaviour, location or movements". In particular, "algorithmic profiling includes any step-by-step computerised techniques that analyse data to identify trends, patterns or correlations".

Through profiling, the individual is selected "based on connections with others identified by the algorithm, rather than actual behaviour" and "individuals' choices are structured according to information about the group, rather than according to their own personal choices".[20] Accordingly, algorithmic profiling risks coming into conflict not only with the right to respect for private life (ECHR, article 8; EU Charter of Fundamental Right, articles 7-8) and the right for protection of personal data (GDPR, article 1),[21] but also with the prohibition of discrimination (EU Charter of Fundamental Rights, articles 1 and 21).

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[18] D. Kahneman, *op. cit.*

[19] See M. Benasayag, *Tyrannie des algorithmes*, Éditions Textuel, Paris, 2019.

[20] B.D. Mittelstadt, P. Allo, M. Taddeo, S. Wachter, L. Floridi, The ethics of algorithms: Mapping the debate, in *Big Data & Society*, 2016.

[21] The GDPR explicitly grants the data subject "the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her" (article 22, par. 1).

3. Remedies

These threats must be faced with the same kind of strategies (educational cultural, social and legal) put in effect to protect people against aggression to their personality. Among other means, it would be appropriate to focus on a richer (and constitutionally oriented) meaning of freedom, not sheerly conceived as absence of constraint but as experience of bonds, of relationships conducive to the ability of expressing one's own idea through a full gamut of channels including (among many other) the augmented one of the web.

Therefore, I particularly appreciated the idea of relational personalism and reflexivity exposed by Prof. Donati as well as the recommendation of a multiple perspective.

Thus, every educational program (and legal measures) must lead young people "to conceive of themselves not only as members of a nation or group, but also, and above all, as individuals dependent upon other individuals and linked to them by common interests and the need for mutual recognition".[22] As such, fully aware of theirs and others' human dignity as well as of the equal right and ability to "re-write their own life stories" out of the jail-cage of algorithms.

Actually, alongside the essential activities of sensitization, digital and emotional education, fundamental for preventing and combating hate speech and *ad personam* forms of hatred, digital violence, in its various meanings, should be addressed by regulatory interventions adopted at a supranational, at least European, level, as the extraterritoriality of the network suggests.

As Prof. Stiglitz said in this conference, "regulating virality is not the same as denying free speech", and "much of the damage of social media is related to virality".

By the way, recently two Nobel prize economists – George Akerlof and Robert Shiller – have rightly highlighted the role of those they call "regulatory heroes": "to the extent that the free market system works well, the credit is largely due to these heroes. To ensure the abundance we enjoy is not the immaculate action of the markets, because it is precisely the free market system that devises increasingly sophisticated forms of manipulation and deception".[23] We will only mention synthetically three main

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[22] M.C. Nussbaum*, Cultivating humanity: a classical defense of reform in liberal education*, Harvard U.P., Cambridge, Massachusetts, 1997.

[23] My own translation from the Italian edition of the book: R.J. Shiller, G.A. Akerlof,

(modest…) proposals of possible remedies. Each indeed have upsides but also downsides which however we haven't the time to analyse in detail. There are no simple solutions to complex issues and I agree with Prof. José Van Dijk that sheer legal means are quite insufficient to cope with problems and interests at stake.

1) Introduction of a new European regulation on Internet service providers (at least with reference to providers of social networking services) which derogates or exceeds that currently outlined by the "electronic commerce directive" (directive 2000/31/EC). On this point it should be noted that a review process of this European legislation has recently been launched.[24] 2) Still with a view to containing digital violence "in the strict sense", we could reflect on the opportunity to regulate anonymity online.

In particular, the two most advanced levels of anonymity could be contrasted: *disapproved anonymity* (subscription to platforms providing false, invented personal data) and *full anonymity* (use of sophisticated procedures and use of services that divert traffic and use encryption processes). A "controlled anonymity" could instead be allowed. By way of example, digital platforms could be required to ask users to identify themselves during registration, guaranteeing the scrupulous protection of the personal data provided in this way. In other words, without prejudice to the prerogative of pseudonymity, that is to express oneself and interact online through a pseudonym, it would be a matter of prescribing to the managers, at least of the social platforms, to ask users, as a condition for registration, to provide their personal details (some social networks have already begun to demand that users with "suspicious" profiles identify themselves by photograph or document).

3) Overcoming of or at least vigilance on algorithmic profiling especially indexing mechanisms based on the sensationalistic nature of the contents and on user profiling.

Alternatively, in order to tackle at least the problem of the many biases that, as emerged from various studies, contaminate the algorithms, it has been proposed to "subject these technologies at the basis of digital platforms to an auditing, consultancy system, which not only evaluates the functional effectiveness, but also the social consequences of their func-

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Ci prendono per fessi. L'economia della manipolazione e dell'inganno, Mondadori, Milano, 2016, Kindle ebook, pp. 29-74 *et seq*.

[24] Proposal for a Regulation of the European Parliament and of the Council on a Single Market For Digital Services (Digital Services Act) and amending Directive 2000/31/EC, https://eur-lex.europa.eu

tioning".[25]Finally, to foster and consolidate the virtuous use of algorithms, for example in order to identify offensive contents, verify them, report them or directly remove them in an automated way,[26] is an interesting idea, which should however be probed with caution, as the risk of arbitrariness inherent in the use of algorithms is very high. In particular, elements that could make this function of the algorithm difficult, insofar as characterized by uncertain outcomes, are the complexity of human language, with its infinite nuances, and the possible use of *ad hoc* strategies, or even analogous technologies, capable of bypassing the algorithmic filter.

But the real way to tread is to stimulate those variables whose enhancement can outweigh and thus drive away the negative ones simply not leaving space to them, and thus favouring flexibility (as Gregory Bateson, quoted above, puts it), namely those resources already mentioned by some reports during this conference like a relational personalism and the virtue of deep reading among them. In a word: dignity, namely the person's full freedom to always write and re-write his/her life story.

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[25] D. Bennato, *Se (anche) l'algoritmo è sessista: ecco perché Instagram preferisce la pelle femminile nuda*, 14 settembre 2020, www.agendadigitale.eu

[26] See G. Ziccardi, *L'odio online. Violenza verbale e ossessioni in rete*, Raffaello Cortina, Milano, 2016.

Human Rights in the Digital Society

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Pope Francis has explained that we are not living in an epoch of change, rather we are witnessing an epoch-making change, mainly driven by digitalization.

Digital technology affects every aspect of human existence: our relationships, our education and our jobs. Modern technology is increasingly becoming the interface between the material and immaterial realms, between individuals and their community, between citizens and government. Unlike other great innovations, such as the steam engine or electricity, digital technology can shape human thinking, influence opinions and mimic human behaviour.

Like all great innovations, artificial intelligence entails opportunities as well as risks. We should therefore embrace digitalization so that it can be used by everyone under conditions of equality, subsidiarity and inclusion. Throughout history man has learnt to master fire, shape materials, sail the seas and fly the skies. Now we need to acquire digital skills through digital literacy so as to appreciate the strengths, the opportunities as well as the risks that this new technology entails.

For the sake of clarity I have divided my presentation into 7 arguments – I will briefly cover the main points which are set forth in greater detail in my written presentation.

Argument #1. Understanding the implications of the shift from the analogue to the digital society

There are several profound differences between a society based on analogue technology and one based on digital technology. In the analogue society the essence of the human condition is the human relationship with other people. By contrast, in a digital society, the essence of the human condition is the connection with an indefinite number of unknown individuals; in the digital society social media followers have taken the place of friends. In the analogue world reality is represented through an indefinite series of concepts, while in the digital world reality is represented through a finite series of numbers.

In the analogue society citizens need to know a lot about the estab-lishment, and the establishment does not need to know much about its citizens. In the digital society, citizens know little about the establishment while the establishment knows a lot about its citizens. Amazon knows a lot about me, whereas all I know about Amazon is its website address.

The analogue society has intermediaries, political parties, unions and as-sociations that act as such publicly; however, they do not control everything, they have clearly defined roles and their articles of associations are available for inspection. Contrary to conventional wisdom, the digital society is not without intermediaries; rather, it has new intermediaries: the owners of the big platforms that control the market and whose articles of association are not open for inspection. The old intermediaries pursued good policies in exchange for electoral support; the new intermediaries provide us with services in exchange for our data. The analogue society considers the right to privacy a fundamental human right. In the digital society there is no privacy; everything is knowable, on display and known. Most Internet users are careless with their data; however, if their personal data were requested by the Government, they would take to the streets to protest against such requests. The analogue society is centred on narration, story-telling, the flow of events and history. The digital society reduces reality to a number; it lives in an eternal present devoid of history.

When a new age begins all power relations, all rights and all duties are called into question. The most powerful individuals tend to impose new hierarchies, while the least powerful people usually succumb. The digital society – therefore – could undermine human rights.

Hence, a reaffirmation of human rights is needed – it is needed first and foremost to protect the dignity of human beings. This is why we need to foster a new notion of digital literacy that teaches people to design and use digital technology.

Argument #2. The case against a Black Box Society

An open and advanced society needs to regulate the excessive power of Black Boxes. Through machine learning, data matching and automatic profiling, black boxes process large amounts of information, understand text, recognize images and connect the dots. Their learning modes are similar to those of the human brain, they require perfect artificial neural networks and sophisticated computational models.

Black boxes gather and interpret data using opaque algorithms – which – by scrutinizing user habits, can predict future behaviour, influence

decisions and shape perceptions of reality. An algorithm designer conveys his beliefs in the algorithm he creates, and so his beliefs become reality. No algorithm is unbiased: the fact that the process involved is mechanical should not make us forget that it has been designed by a human being. The biases of the algorithm's designer can creep into the algorithm and affect outcomes. Unbiased design of the algorithm must therefore be a key component of digital literacy.

In the digital society algorithmic decision-making needs to be fully transparent and individuals should have the right to challenge decisions made by an algorithm. In a democratic society, algorithms must be accessible when algorithmic decision-making has implications for fundamental rights. An unbiased approach is impossible and may not even be desirable; but algorithmic design must not be biased in ways that are unacceptable. We should therefore strive to turn black boxes into glass boxes.

Argument #3. The digital society raises the issues of democracy, news reporting and knowledge in new ways

The rapid growth of digitalization has not been matched by a corresponding growth in awareness of the changes it has brought about. The issue of regulation arises in connection with all forms of power. Digital power is no exception and so the question is how to regulate it, and make it human-centered, without overregulating it. Today a number of big private companies dominate a substantial part of the world-wide web wiping out competition and circumventing government control. Big tech companies now provide services that have become indispensable – this is why they have enormous influence on our lives and government policy. They are the market and the market players and administer their own justice. They shape public opinion through effective messages they send out in rapid succession, which makes it difficult to assess whether they are true or not. As a result, the most vulnerable people tend to confuse information thus obtained with knowledge.

Non-democratic countries may use Artificial Intelligence for biometric recognition to track and profile people. These practices are a violation of privacy and should be allowed only for the prevention of serious crimes. In spite of the risks it entails, digital technology can be a friend of democracy, a tool for disseminating information, spreading knowledge and facilitating dialogue. However, a failure to regulate the big tech industry would achieve exactly the opposite effect: democracy could give way to automated thinking – thinking would become become sterile. Automated thinking

would take over, dehumanizing public discourse and leading to false political beliefs. This is why Art. 5 in the European Commission's proposals for regulating Artificial Intelligence bans subliminal manipulation techniques.

Argument #4. The case for digital literacy

Formal rules are needed, yet rules alone are not enough; what we need is 'good customs'. Good customs can be learnt. The laws that regulate the digital industry should be complemented by digital literacy so that we can learn to navigate the digital space responsibly. Education is more important than prohibition. Fraudulent use of the Internet may lead uninformed citizens to believe false opinions. A perception may gain currency whereby the Internet is the source of truth – hence "verum et digitale convertuntur" (Giambattista Vico, 1668-1774, maintained "verum et factum convertuntur"). Therefore, if a piece of news is in the digital environment it is certainly true, especially if it matches expectations. It is hardly surprising, as this was once true of newspapers as well as radio and television. Then education and experience helped us evaluate the different aspects and discern between them. Education and experience will help us acquire a critical understanding of the digital environment.

Only reliable truth may engender trust in human relations and lay the foundations for a new social contract. The best solution lies not in ex-post control; it lies in digital education and in designing systems – ex ante – in a way that prevents social platforms from becoming tools for disseminating fake news and inappropriate content. Digital education, however, entails two challenges.

The first challenge is the generation gap. While the digital world often remains inaccessible to older generations, digital technology is often misused by younger generations. Education, however, can help seniors learn basic digital skills and teach young people to use digital technology responsibly. The second challenge is the digital divide. Access to technology is an economic and geopolitical challenge. In some regions of the world the digital divide exacerbates inequalities within and between nations. Digital humanism requires that nobody be left behind.

Argument #5. "Digital companies" and digital space

Big digital companies exert their power in the new space they have created and to which they hold the access key. Cyberspace is global, it pervades all nations of the world, yet it eludes each one of them.

Digital companies hold de facto power that no one has ever had before:

they influence a large portion of the lives of individuals and States and provide indispensable services which can affect the quality of private and public life. If these companies were to decide to pull the plug, the world would stand still. This is not the first time in human history that big private companies have acted in one realm as if they were a State: just think, for example, of the British East India Company and the Hudson's Bay Company, a fur trading company established by King Charles II of England.

Both companies ruled over vast territories, had armed forces, levied taxes and administered justice. Just like the digital companies today, the only difference is that the latter can provide services to the entire world population. Our goal should therefore be to achieve global governance of the digital ecosystem.

In this connection, the recent manifestos signed by digital CEOs and other leaders in the digital economy, calling for human-centered technological development and global governance of the digital ecosystem, deserve more enthusiastic backing by the political ruling class.

Argument #6. Define the threshold of human agency that should not be relinquished"

In his diaries, Kierkegaard spoke of the "courage to say 'I', the courage to claim one's own unclassifiable human dignity". Digital tools, by contrast, measure and turn the social identity of each one of us, our most intimate thoughts, affectivity, beliefs and even our buying decisions – into profiles based on digits. But individuals are not the sum of their personal data. The courage Kierkegaard wrote about is the claim to an individual's own specificity that cannot be relinquished. The uniqueness of individuals needs to be protected. This is not a question of narcissistic individualism. It is rather the issue of the primacy of human agency that should not be relinquished.

We should not have any doubt in marking the difference in value between a human being and an algorithm. Immersed in the digital swarm people risk being downgraded from "moral beings" to merely "physical beings".

Digital technology may compel Homo sapiens to take an anthropological leap towards Homo connexus, who is always connected and studies, travels, works, and enjoys himself online. Paraphrasing Aristotle, man becomes a data-generating being, but can never be reduced solely to this.

The constant interaction with digital technologies may cause people to shut themselves off from the world and live in a secluded place – where they are relieved of the trouble of thinking and making decisions – a place

that ends up resembling a 21st century Kolyma. From the Metal Ages – when homo sapiens first appeared on earth – we have now come to our time – the age of algorithms. Homo connexus may become a bar code that can be immediately recognized and traced back to one or more algorithms. A digital transformation not governed by human beings can empty human existence of meaning. Homo connexus must not renounce his being Sapiens and must claim his irreducibility to a mathematical model.

The case for a digital society

The term Digital Society refers to the sum of cultural and social aspects produced or influenced by Artificial Intelligence, but dominated and governed by human values. Hence, digital civilization is not synonymous with digital age or digital society. Age and society are purely descriptive terms, they merely describe a time and a place characterized by the massive presence of digital technology.

Digital civilization, and I emphasize the noun, refers to the human condition in the digital society, characterized by man's mastery of technology. This mastery is based on five factors: transparent criteria in algorithmic design, digital education, the protection of the freedom to decide for oneself, a ban on mass surveillance technology, human supervision of sectors in which algorithms make decisions that have direct impact on people's lives.

A permanent dialogue among humanists, technologists and businesses is needed because we are approaching technological discontinuity as autonomous machines perform tasks by themselves. At this stage interaction between technology and ethics becomes crucial. Achieving man's mastery over technology is the goal we should pursue in the present time if we are to remain free in the future.

Understanding the Proposed Solutions to the Problem of Online Mis/Disinformation

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In 2016, the votes for Brexit and Donald Trump and the later Cambridge Analytica scandal made the public aware of the prevalence of online disinformation (Wardle 2016; Tandoc et al. 2018). Outrage grew as information trickled out about the role of the Russian government, the lies spread by Stephen Bannon and the far-right Breitbart News Network, as well as Fox News. Attention turned to Facebook and Twitter, which were blamed for spreading lies in the relentless quest for clicks and likes. As journalists began writing about the spread of disinformation, the public and policy makers came to understand that the platforms' business model was based on generating outrage and anger (Bell 2016; Angwin and Grassegger 2017). The problem was systemic.

It was a shocking wakeup call. The consequences went well beyond interference in democratic elections. Fury at the platforms intensified as it became clear that rumors and hate spread on Facebook and WhatsApp had fueled attacks on Muslims and ethnic minorities in India, Myanmar, and other places (Ingram 2018). By 2019, the Anti-vaxxer movement had grown so large that measles had returned in New York, the Philippines, and Italy and polio had made a comeback in Pakistan (Masood 2019; Shahzad and Ahmad 2019; McNeil Jr 2013). During the Covid pandemic of 2020, conspiracy theories and disinformation spread widely online along with vaccine disinformation, further fueling worries about the power of big tech to spread false information. After the US 2020 presidential elections, the January 6th storming of the US capital reinforced the view that a "weaponization of the digital influence machine" had taken place (Nadler, Crain & Donovan 2018).

In the wake of 2016, policy makers, the platforms, entrepreneurs, journalists and educators galvanized, setting up committees, commissions, and research groups, searching for new ways – and even new laws and regulations – aimed at tackling the problem of online disinformation. These steps were taken while the academic research was still underway, so the proposed

solutions were often not informed by evidence as to what would work or even a deeper analysis of the problem. However, it was a case of needing to do something, so actions were taken before all the needed information was in (Engelke 2019; Nelson 2018).

This paper outlines a taxonomy of solutions that covers many of the different initiatives aimed at solving the problem of online mis/disinformation, providing a brief outline of the rationales and an update as to where things currently stand. Our original area of study was the post-2016 period. Now, five years later, it is clear that the European Union is far ahead of the US in the regulation of big tech and some of the EU's policies have implications for platform practices globally. It's also clear that the spread of mis/disinformation during the Covid pandemic, and the prevalence of anti vaccination mis/disinformation, has accelerated the desire to take action.

Why such different ideas about solutions?

And yet, as well as a lack of political will, there is disagreement as to what actions should be taken. Why do so many thoughtful and experienced people come up with such radically different solutions to the problem of online mis/disinformation? One obvious reason is that there are very different financial interests involved. The second reason has to do with the underlying beliefs of the groups proposing the solutions, including the US aversion to government regulation.

The third reason could be viewed as the exposure effect, as repeated exposure to an idea breeds support for it (Zajonc 1968). Organizations do what they are used to doing and this familiarity makes them think they are doing the right thing. Journalists believe in journalism and so think that more and better journalism is the solution. Wedded to the belief that trust in the media is somehow related to journalism practice, journalists also hope to improve standards and build trust through engagement and fact-checking (Ferrucci 2017; Wenzel 2019; Nelson 2018; Graves 2016). Fact-checkers believe that supporting a culture of truth may save not just journalism but also democracy (Ferrucci 2017; Graves 2016; Wenzel 2019; Cheruiyot and Ferrer-Conill 2018; Amazeen 2018a). Journalists believe they can build trust by engaging with audiences and that this can restore journalism to its rightful role in society (Robinson 2019; Ferrucci 2017). Groups that teach media and promote literacy believe that is the answer (Mihailidis and Viotty 2017). The large platforms and tech entrepreneurs seek to suppress disinformation by doing what they know how to do, i.e. hiring content moderators, changing platform

algorithms and blocking certain kinds of false or inciteful content (Drey-fuss and Lapowsky 2019). Similarly, regulators seek regulation. The innate bias towards what is familiar is part of why different actors have backed different solutions.

The demand for disinformation and the supply of it

This paper proposes an analytical framework with which we can assess different solutions and which we believe provides some understanding of the limitations of each. For an overall understanding of the different ideas about solutions, we find that the economics terms "supply side" and "demand side" provide a useful framework for understanding the belief systems of the different groups involved in promoting decisions to the mis/disinformation problem. Guy Berger notes that the creation and dissemination of information lies on a continuum that includes production, transmission, reception and reproduction, and many of the efforts aimed at fixing the problem emphasize one part of the continuum over another (Posetti & Bontcheva 2020; Author interview, Guy Berger 2019).

Those regulators who focus on the supply and transmission, of course, understand that there has always been some mis/disinformation – a point frequently made by those focused on audience consumption patterns. Societies can cope with small amounts that are of limited reach (such as a niche magazine with low circulation) but excessive supply of false information/rumors seeps into mainstream conversations, overwhelms audiences, results in cognitive fatigue and makes it hard to distinguish true information from false information. Repeated exposure may aggravate the problem as the more audiences see something, the more they believe it (Pennycook et al. 2018), even if it's factually incorrect and later discredited. Corrections may not be seen by the people who originally saw the false information and may not be persuasive when someone's mind is made up and they want to see their ideas confirmed (Kolbert 2017). Indeed, corrections, rather than having the intended effects, may only enhance distrust (Karlsson et al. 2017).

The regulators who focus on the prevalence of mis/disinformation see the problem as related to an excess supply of mis/disinformation. They focus on the incentives to supply it and the consequences of an excess supply. They ask how changing incentives by putting in regulations, codes of conduct, etc. can lessen the supply of mis/disinformation. The supply siders want Facebook, WhatsApp, and Twitter to limit what they circulate and promote and stop allowing people to make money off producing and

disseminating false information. Another way to change the platforms' incentives would be to make them liable for what appears on their platforms. To the extent that such changes in incentives do not suffice, some regulators believe regulations are necessary, including laws against hate speech or limits on the ability to make certain messages go viral.

By contrast, others focus on improving the ability of consumers to evaluate the information with which they are confronted. They may be relatively unconcerned, arguing that "fake news" and mis/disinformation has always existed, and there is little evidence that its audiences are persuaded by what they see online and that, accordingly, there is no reason to panic (Allcott, Gentzkow and Yu 2019). The tech companies fall in this category, expressing the view that they should not be blamed, and that the responsibility lies with society more generally and the responsibility of individual users. Some, including Facebook and various foundations (Murgia 2017) fund the teaching of media literacy in schools so that audiences will become more discerning consumers. Others believe in labelling non-verified news in the hope this will get audiences to stop circulating it. Facebook is funding fact-checking efforts throughout the world (Funke 2019). Many free expression groups, particularly in the US, oppose hasty government responses that broaden censorship and liability for the platforms arguing that these could do long-term harm.

The role of motivated reasoning, financial incentives and ideology

Incentives and ideology help us understand the position taken by various parties on the desirability of the appropriate measures to deal with mis/disinformation. A term that originated in social psychology and is used in economics to understand different perspectives is "motivated reasoning" or "reasoning in the service of belief" (Epley and Gilovich 2016; Kunda 1990).

Unsurprisingly, many of the beliefs about solutions to the problem of online mis/disinformation often correspond with the financial incentives particular to each belief-holder. As US muckraking journalist Upton Sinclair is quoted as saying: "It is difficult to get a man to understand something when his salary depends on his not understanding it".

In the case of the tech companies, there is a vast amount of money at stake. Facebook and Twitter don't want to be regulated or change their business models, so they would rather off-load responsibility for fixing the problem and donate small amounts of money to help solve it (author interview, anonymous, May 2019). Their ideology is often that of techno-lib-

ertarianism, so they reject regulation, or at least regulation that is likely to affect their revenues.

Financial incentives underscore the belief systems of the tech giants but belief in certain solutions over others also results from underlying ideology and belief in what one does. "If you have a hammer then everything looks like a nail" (Maslow 1966). Journalists believe in journalism and so are more likely than others to believe that more and better journalism is the solution. Wedded to the belief that trust in the media is somehow related to journalism practice, journalists also hope to improve standards and build trust through engagement and fact-checking. So, too, foundations are accustomed to giving grants, so they see the problem as one that they can help solve by giving grants to organizations trying to research and fix the problem.

Solutions that focus on reducing the supply of false information online are controversial and difficult to implement. Fixes that focus on audience demand may seem more do-able in the short term. It takes years of complicated negotiations to pass a law about online hate speech or transparency of political advertising. Giving a grant to a pre-existing news literacy NGO or a fact-checking organization can be done in a matter of weeks. The appeal of short-term solutions to the tech companies is obvious. Offloading the problem of mis/disinformation takes the onus away from the platforms and puts it on journalists and consumers (Bell 2016). It would be simple and convenient if these ideas worked, but they were implemented at a time when evidence was lacking. Moreover, they are expensive, hard to scale, and slow (Schiffrin et al. 2017).

The role of national bias: US focuses on individual responsibility, Europe is more supportive of regulation. Repressive regimes are repressive

In looking around the world at the different solutions proposed it is clear that national bias and ideology play an important, if unspoken, role. The US is more suspicious of government regulation than Europe and less likely to push for government-led solutions than Germany. Differences within the EU Commission as to how to solve the problem stem in part from the ideologies of Commission officials, with members from former Communist countries less likely to support government regulation and more likely to skew towards voluntary efforts by the platforms (author interviews, Brussels, March 2019).

Governments with less open, or downright repressive, attitudes toward freedom of expression have little compunction in cracking down on the

platforms and using the fear of fake news as a reason to practice censorship online. Cuba, China, Singapore, Turkey, and Vietnam are all examples that come to mind. For instance, in Singapore, journalists face potential jail time if they publish stories that are perceived as "falsehoods with malicious intent or going against Singapore's public interest" under the 2019 law intended to combat mis/disinformation (Vaswani 2019).

Many of the US responses highlight the individual responsibility of audience members, exhorting people not to circulate or forward information that is false and to learn how to tell the difference between true and false information. Alan Miller (2019), the founder of the US educational non-profit News Literacy project, explains, "We need a change in consciousness to counteract this fog of confusion and mistrust. First, we must understand − and take responsibility for − our roles in the 21st-century information ecosystem. Misinformation can't spread virally unless we infect others with it. We need to slow down before we hit 'share' or 'retweet' or 'like,' and ask ourselves if doing so will mislead, misinform or do harm". But without regulation this "slowing down" is unlikely to occur. Those spreading information often have reasons for doing so beyond just carelessness. The spreading of political disinformation or non-scientific beliefs such as the anti-vaxxer movement are just two examples.

Defining our terms

There are many kinds of mis/disinformation and several attempts have been made to provide typologies. Tandoc, Lim, and Ling (2017) reviewed 34 scholarly articles published between 2003 and 2017 and came up with a typology that included: satire, parody, false images, advertising and public relations, which sometimes overlaps with propaganda. For our purposes we will consider, in a following chapter, the relationship between propaganda and disinformation and focus too on what Tandoc, Lim, and Ling describe as "news fabrication". This is often done with the intention to deceive, and the false news is often difficult to identify as it presents as a traditional piece of news with similar format and conventions.

As Tandoc, Lim, and Ling (2017) note:

> As with the case of parody, a successful fabricated news item, at least from the perspective of the author, is an item that draws on pre-existing memes or partialities. It weaves these into a narrative, often with a political bias, that the reader accepts as legitimate. The reader faces further difficulty in verification since fabricated news is also published by non-news organizations or individuals under a veneer

of authenticity by adhering to news styles and presentations. The items can also be shared on social media and thus further gain legitimacy since the individual is receiving them from people they trust. The authors also note that "facticity" is another question in the determination of false news, as the false information might be derived from, or rely on, something that is true or partially true: for example, the right-wing website that slaps a false headline on an article from a reputable media outlet. Audience matters as well because under certain conditions, audiences are more receptive to false news.

Another set of discussions around the problem of false news has been the recent interest in disinformation, which is false information spread deliberately to deceive. The English word disinformation resembles the Russian word "dezinformatsiya", derived from the title of a KGB black propaganda department.1 The typology created by Claire Wardle, executive director of First Draft, discusses this phenomenon and has been widely used. In her influential papers and reports Wardle said the term "fake news" is misleading and in 2017 released her rubric "Fake News, It's Complicated", which is now a standard for the discussion about the problem. In this paper, Wardle describes the types of mis/disinformation as satire and parody, misleading content, imposter content and fabricated content, false connection, false context, and manipulated content (Wardle & Derakhshan 2017). Her paper with Hossain Derakhshan also included a rubric of who the different actors and targets are such as states targeting states, states targeting private actors, corporates targeting consumers (Wardle & Derakhshan 2017).

They further make the point that the intentions of the person creating and/or amplifying the false information are relevant to the definition.

- Misinformation is when false information is shared, but no harm is meant.
- Disinformation is when false information is knowingly shared to cause harm.
- Mal-information is when genuine information is shared to cause harm, often by moving information designed to stay private into the public sphere.

Of course, disinformation disguised as parody can spread into conversations.[1]

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[1] A relatively harmless example is the letter purportedly written by F. Scott Fitzgerald about the Spanish Flu which circulated widely in March 2020. https://www.reuters.com/article/uk-factcheck-quarantine-fitzgerald-lette/false-

A word about trust

Many of the "demand-side" solutions proposed for the problem of mis/disinformation are grounded in discussions about trust and credibility. Both are part of the larger question of persuasion, and fears of persuasion underscore the anxiety about mis/disinformation. Societies worry that repeated exposure to an argument (whether right or wrong) will influence behavior and, indeed, the rise in hate crimes, the election of demagogues in parts of the world, and the drop in vaccination rates in many countries all suggest that online mis/disinformation is, indeed, a powerful persuader. Parsing the impact of information on the human psyche is extremely difficult, if not impossible, but understanding what we know about trust in media is part of thinking about the impact of information

There are, of course, historical precedents. Some of the early discussion about media trust took place in the period around World War II when intellectuals in Europe and the US (particularly those in the Frankfurt School) tried to understand how citizens could be susceptible to Nazi propaganda (Jeffries 2016). In the US there was worry about the influence of demagogues, such as Father Coughlin, who used radio to get their messages across. Fear of new kinds of technology has often contributed to fears of mis/disinformation (Tucher 2013) but we believe that it's a mistake to dismiss such fears as mere Luddism. Rather, there were objective political catastrophes taking place, which were to have global consequences, and worrying about that and trying to understand the role of propaganda, including how it was created, disseminated, and had influence, was a necessary response to the times.

Demand-side efforts: media literacy, building trust and engagement with media

The rise of Fascism and Communism in the 1920s and 1930s provides a backdrop to the rise of media literacy. One of the earliest efforts was former journalist Clyde Miller's attempts in the 1930s to teach U.S. schoolchildren how to understand and resist propaganda. Miller was a former journalist who worked at Columbia Teachers College for 10 years. During that time, he raised one million dollars from Boston businessman Edward

claim-this-is-a-1920-letter-from-scott-fitzgerald-in-quarantine-during-the-spanish-influenza-idUSKBN21733X

More serious examples can be found in the works by Peter Pomerantsev and Yochai Benkler, Robert Faris and Hal Roberts which we cite frequently in this dissertation.

A. Filene for the Institute for Propaganda Analysis (IPA). Miller's story has not been fully told and provides important insights for current debates. His taxonomies of propaganda techniques and his work analyzing examples of disinformation anticipated many of the techniques used today. Miller and his colleague, Violet Edwards, worked closely with teachers and provided material for them to use, as well as weekly mailings for school children.

As well as media literacy efforts, there are other efforts that focus on audience demand for and trust in quality journalism. These efforts try to build trust in journalism by establishing journalism as a force for truth-telling (in the case of fact-checking) or by trying to make media outlets relevant to audiences (through community engagement efforts). After 2016, foundations and the platforms reached for fixes and funded efforts that tackled the demand side for a range of reasons. Facebook wanted to avoid regulation and, further, believing in the importance of free dissemination of ideas and information online, thought that helping audiences become more educated would be a suitable fix. We examine the efforts to combat mis/disinformation online by building trust in journalism and the ability of audiences to distinguish good from bad information.

Supply-side solutions: dissemination, deplatforming, regulation, provision of quality information

Our taxonomy includes solutions related to the supply, transmission and reproduction of online mis/disinformation: the attempt to use algorithms and machine learning to block and suppress content, and the possibilities for regulation. This would include the use of artificial intelligence and natural language processing and assesses the likelihood of these being effective and able to scale. There are also a few initiatives (such as Newsguard, the Trust Project, the Journalism Trust Initiative) that rate news outlets and propose standards for journalists to follow and suggest that these may be faster to scale than the tech solutions of the small start-ups.

Other supply side ideas include the provisioning of quality information, which is done by governments, the private sector and foundations. The tech companies have also begun doing this by providing, for example, trusted information about elections or Covid-19 vaccines. Defamation lawsuits brought by people who've been injured by online mis/disinformation are another attempt at affecting the supply. So is deplatforming of those who break the rules of the platforms. Disclosure as to who is putting out mis/disinformation is another solution. Journalists cover the influencers and the Troll Farms. Some governments regulate political advertising.

Another set of supply side laws are those that affect the liability of the tech companies and thus incentivize them to remove illegal speech. In the US there has been an extensive debate about modifying Section 230 which could allow people who have been harmed by online speech to sue the tech companies. However, the US commitment to the First Amendment and free expression would preclude many possible solutions that other countries might be willing to undertake (Benkler, Faris, Roberts 2018) and so far, Section 230 has not been modified.

Germany was the first European country to pass a law making the tech companies liable for illegal speech. The so-called NetzDG law made the platforms responsible for repeated violations, levying fines on them.

Many "copycat laws" that explicitly reference NetzDG have popped up in at least 13 countries (according to Freedom House): Turkey, Singapore, Russia, Venezuela, Malaysia, the Philippines, Honduras, Vietnam, Belarus, Kenya, India, France, and Australia. In many of these countries, critics say the law is used to censor online speech.

In June 2020, the EU announced a forthcoming Digital Services Act which will consider how much liability tech giants should face for content they're hosting. They released a draft on December 15, 2020. The rules set limits on content removal and allow users to challenge censorship decisions but don't address user control over data or establish requirements that the mega platforms work towards interoperability. The other half of this legislation is the Digital Markets Act which targets "gatekeepers", core platforms that act as a gateway between business users and customers that use unfair practices and lack of contestability which lead to higher prices, lower quality and less innovation in the digital economy.

The United Kingdom is also planning an expanded government role and has broadened its mandate by discussing harms that result from online mis/disinformation as well as illegal speech. They are discussing a new regulatory unit and have called for platforms to exercise a 'Duty of Care' as well as liability and fines for the social media platforms, codes for political advertising, mandated disclosure by social media platforms, auditing and scrutiny of the platforms and their algorithms, protection of user data and antitrust measures. On April 7, 2021 the CMA launched the Digital Markets Unit (DMU) to introduce and enforce a new code of conduct to improve the balance of power between the platforms and news publishers. The DMU will coordinate with other UK organisations like Ofcom and international partners grappling with tech regulation. The DMU is still awaiting government legislation to give it the power it requires.

Moves by the tech companies

Since we began our research, the tech companies have stepped up their efforts to control mis/disinformation, though not to the satisfaction of their critics. They've expanded their labeling, fact-checking and removal efforts. They've also dramatically increased the amount of money given to support journalism and journalism outlets, including extra grant making in 2020 during the Covid pandemic.

Facebook's long-awaited oversight board[2] (its supreme court for content moderations decision) launched in May 2020 and in spring 2021 handed down a much-publicized but inconclusive decision about the deplatforming of Donald Trump.

During the November 2020 US election, Facebook promoted its election integrity measures[3] including: removing misleading voting information, blocking political and issue ads the week prior to the election, and partnering with Reuters and the National Election Pool to provide "authoritative information about election results".

Conclusion

In short, since 2016 there have been many attempts at curbing the spread of online mis/disinformation or at making recipients less susceptible.

The challenge is to find solutions that work, that do not threaten free expression, and, above all, that cannot be gamed by interest groups such as the tech giants or politicians who are not acting in good faith. Finding laws that cannot be abused by those in power will be difficult. But there is a lack of evidence showing that fixes like fact-checking, media literacy, community engagement, and tweaking algorithms are sufficient. Further, the tech companies have demonstrated that voluntary codes of conduct are not enough. It is the threat of regulation that propels them to act. For this reason, we argue in the final parts of this dissertation that regulations – most likely originating in Europe – will be an essential part of fixing the problem. We further support the initiatives underway to create large funds that will support public-interest media whether by expanding public-service broadcasting or by supporting small, community-run news outlets.

What is clear is that, while the problem is urgent, there is disagreement as to the solutions and unwillingness by Facebook, Twitter and Google to

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[2] https://www.theguardian.com/technology/2020/sep/24/facebook-oversight-board-launch-us-election

[3] https://www.facebook.com/zuck/posts/10112270823363411

change their business model. Given how serious the problems of online mis/disinformation are it's hard to see how they will be solved. More likely we will continue to see fragmented and piecemeal measures.

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Final Statement

"An epochal change"

Pope Francis has repeatedly called attention to the fact that "what we are experiencing is *not simply an epoch of changes, but an epochal change*. We find ourselves living at a time when change is no longer linear, but epochal. It entails decisions that rapidly transform our ways of living, of relating to one another, of communicating and thinking, of how different generations relate to one another and how we understand and experience faith and science".[1] One of the features (and perhaps the main feature) of this style of transformation is the close interdependence of the factors that contribute to it. This interdependence is all the more effective if not exhibited and apparent – the more, that is, the different areas that contribute to change seem to operate in spheres separate from each other. A typical example is that of the new digital media, which while presenting themselves as more or less innocent instruments of entertainment, actually move enormous and complex economic, political and geopolitical, cognitive, anthropological and social transformations. Three aspects of this complex ecosystem in transformation are addressed: its foundation consisting in the new business models of data capitalism; its developments with regard to new concepts and new practices of communication; and finally, some possible lines of proaction and design that take place within it.

Data capitalism as a new form of global capitalism

The radical novelty of the transition from traditional media to digital platforms is the advent of a new business model. This is based on the apparent gratuitousness (at least partial) of many tools to enjoy or produce content; in reality, digital platforms have accompanied a content *production* activity (often entrusted to the users themselves, who thus become "prosumers"), with a remunerative data *extraction* activity, made possible and ubiquitous both by the traceability of users' *online* activities, and by the multiplication of sensors able to record the activities of subjects within

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[1] Francis, Christmas Greetings to the Roman Curia, 21 December 2019.

the *offline* world. This extraction of resources (variously called "(big) data capitalism", "algorithmic capitalism", "surveillance capitalism", or even "neo-colonialism") generates a cultural revolution that makes social subjects, their behaviors both online and offline and their mutual relationships (or rather, the traces of all this), a new type of merchandise.

On the other hand, data capitalism and the development of the digital platforms that constitute its main tool, are based on the connection of different and multiple economic circuits that were previously less directly interconnected. First of all, digital platforms seek to attract and manage an economy of time and attention of their consumers, and contribute to determine the trends of their reputational economy: in this way they influence the lives of individuals often in a decisive way with regard to their self-image and self-esteem. Secondly, platforms influence the labor economy, including by increasing a *gig economy* based on precariousness and new forms of exploitation. Finally, the data economy involves new forms of surveillance that can easily slip from the field of media entertainment and hyper-profiling advertising, to that of social and political control (think for example of biometric identification technologies, common to the media as security and control equipment). New geopolitical games are being played on the issue of data possession and control, with the North American bloc connecting with the Chinese bloc and holding Europe (and other parts of the globe) in a dangerous technological, economic and cultural grip.

Transformation of practices and the idea of communication

Among the most important (and least visible) consequences of these changes is a questioning of the concept and practices of *communication*. The problem arises from the fact that, as mentioned above, platforms use social relationships to engage their users, and thus capture their attention and the data of their behaviors. As a result, social interaction is re-engineered, re-designed in order to maximize users' investments of time, attention, emotions, and online actions.

Hence a series of phenomena from which the main evidence can be indicated. First, the construction by the algorithms of "time spheres" and "cognitive and emotional cages" in charge of organizing information and *touch points* for users; these "bubbles" of communication lead them to live online in homogeneous worlds that develop interests and attitudes in real time which are well tuned within them but, at the same time, different and sometimes irreconcilable with each other. In this way there are no common spaces for dialogue, and the same techniques of confrontation,

understanding and negotiation between different positions enter into a shadow zone. Secondly, and consequently, this situation fuels the spread of *hate speech*, of online hatred; as well as of those particular contaminations between information, serial fiction and role-playing games that produce cases of disinformation, misinformation and post-truth. Finally, the connatural immersiveness of the "metaverse" of the platforms forces other forms of both direct and mediated communication into marginal and residual positions: for example, today there is a worrying decline in the learning of reading processes, precisely in the formative years in which this learning produces greater fruits for the maturation of attentive, cognitive, emotional and empathic skills.

These transformations in communication processes lead us first to wonder whether our idea of communication is sufficiently up-to-date to grasp the extent of these changes. In this direction, for example, many observers propose to shift the center of gravity of the concept of communication, from the passage of information to the transformation and mutual conformation between the subjects involved.

The media ecosystem as a place of active citizenship

The realism of such a view must not be confused with possible determinism or pessimism. Although it tends to appear as a "naturalized" environment, the media ecosystem is a human construction subject to design to be revealed and dynamics to be oriented or reoriented. The most appropriate attitude is therefore not that of flight or rejection but rather that of reactive and proactive commitment: the City of Man today presents itself as an infosphere and a metaverse, and it is within it that it is necessary to live and operate.

Three areas of similar commitment

A first area concerns the political, economic and legal structural interventions entrusted to governments and other national and supranational policy-making bodies. In this area, it must be made clear that today some large economic flows guide all others (including material, environmental and financial ones): the economy of time, attention, reputation; the information economy; and the data economy. These flows must therefore be subject to particularly accurate regulation and control, ensuring both their transparency and accountability, and the fair distribution and redistribution of their resources and those they generate. Just think of how quality information requires careful public scrutiny of private initiatives, expressed

in the assurance of certain rights, the financing of certain initiatives and the regulation of potentially harmful practices. In this regard, the European model must certainly be defended and encouraged. Detaching itself from the American and Chinese models, it provides for targeted state and inter-state intervention in the markets in order to defend certain principles such as individual privacy, the blocking of *fake news*, the payment of taxes by technology companies, the transparency and *accountability* of the algorithms used by platforms, etc.

A second area of intervention and commitment concerns the culture of communication that we intend to live and make live. On this point it is necessary to reverse a current trend, which adopts as a communication model the one proposed by the media platforms. Rather, it is necessary to recover an idea of communication based on *existence* rather than on *functioning*; on the richness and complexity of interhuman relationality, which cannot be replicated or implemented through the relationships between men and machines; on the full recognition (and, before that, on active research) of otherness. Educational institutions are undoubtedly strategic places for the promotion of this idea of communication: in this regard, the issue of digital training must be rethought in the broader context of the global educational emergency, a mirror and a tool for perpetuating all the main inequalities of our time and of our planet.

Finally, a third area of active presence in the contemporary media eco-system is that of contemporary religious and spiritual experience. Although the logic of this ecosystem pushes towards "horizontal" forms of relationship, it is also true that some forms of formative communication, and in particular the transmission of the Christian *kerygma*, must also preserve on the Net a "verticality" between those who teach and those who learn, in order to rediscover a sense of "magisteriality". In this perspective, it would be necessary to examine how the different religious communities have organized their online presence (also starting from the experience of the Covid-19 pandemic); what relationships they have established with the imposed constraints of the platforms; what opportunities of magisterium but also of encounter and service have been established (also through the construction of "bottom-up" platforms of information, relationship and mobilization); and, in general, how the new context of the platform society is promoting, transforming, homologating or extinguishing the different forms of spiritual experience.