

Department
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Course of Political Sociology

The effects on media in the context of the pandemic crisis: the rediscovered role of technology during Covid-19

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Introduction

Media and digital platforms during Coronavirus. How did the role of media and digital platforms change during the Coronavirus emergency? Media consumption has set new records for weeks, in response to the growing need for information, entertainment and socialising. TV viewers and the time spent watching it are increasing, even among the youngest. The consumption of video streaming services is increasing, internet radio listening is growing. There is a higher consumption of news: 2 out of 3 people say they inform themselves more often than before Coronavirus arrived. In recent years there has been much debate on how information, in the age of social media governed by algorithms, has become a commodity.

The pandemic has instead reminded us of its role as a public service and made it clear that being informed is fundamental for the exercise of citizenship. However, the growth of media consumption during the pandemic risks not being monetised. In fact, many investors have frozen advertising investments, both for economic reasons and disruption of the supply chain, as well as for a need for 'brand safety'. For the future, the strongest media brands will be those able to maintain their relevance and ability to meet the needs of the public and ensure a quality and safe environment for brand communication.

“ The species that survives is the one that is able best to adapt and adjust to the changing environment in which it finds itself ”¹. In this time frame full of changes defined by the worldwide arrival of Covid-19 it has been tremendously important to readily adapt to a new situation for the sake of the mental survival rather than physical.

In a period where all our certainty disappeared in front of our eyes, from what used to fill our days - work, school ... - to what has always been considered and seen as less necessary - hobbies, interpersonal relations - it has been our duty to put effort in finding possible solutions to best adapt in this completely unimaginable world. What became immediately clear is the need we have to be continuously in touch among us...

¹ Charles Darwin's thought readapted by Leon C. Megginson, 1963

While the pandemic forced isolation, the Internet enabled to maintain a sense of normality by making certain rights, such as the right to education or health, practically available. New digital behaviours intensified during the emergency, from the use of apps for communication, working from home, training and entertainment, to the e-commerce.

The first chapter treats the role of social media as a lifeline in this period of uncertainty. From the original function of the opinion leader to his version 2.0, i.e. influencers, passing by the concept of live stories on Facebook and Instagram and the Agenda Setting theory. It then outlines the useful rediscovered role of streaming platforms such as Netflix and Amazon Prime Video and it concludes itself by defining the new outlined “sad” world of music.

The second chapter begins by outlining the concept of platform society, then the even newer one of *platfirm*, both connected to the web 2.0. It continues by dealing with the importance of educational platforms and e-learning. Finally, it concludes by talking about the obvious change of age caused by the arrival of Covid-19 and the increasingly powerful digital capitalism.

Technology in this period has rightly found several ways and various utilities, from bringing groceries directly home thanks to drones so to lower the probability of coronavirus's infection, to going to the doctor remotely, reducing the waiting time on the one hand and raising the percentage of healed on the other. It is of great relevance the role covered by the Big Five of technology i.e. Google, Amazon, Facebook, Apple and Microsoft. We will see accurately later a crucial issue regarding the technological world and the facial recognition function. The third chapter ends with an interesting and educative video that explains how Artificial Intelligence is useful and necessary to analyse data about the environment to protect it.

Chapter 1 : Social media and participative culture

1.1 - from opinion leader to influencer: the social role of influencers at the time of Covid-19

To arrive and talk about why influencers opinions have acquired such value as reference points in these last years it is essential to know and consider the two-step flow of communication theory, developed by Katz and Lazarsfeld in 1955 ². The theory is based on clear assumptions but even so, its operationalisation has been methodologically difficult to apply. The two authors affirm that there is no such thing as a unitary flow of information moving only and directly from media to final recipients. The communicative flow follows a two-phase path: firstly, information pass from media to opinion leaders; secondly, from the mediation operated by opinion leaders straight to the related social group. In other words, when the information reaches the opinion leaders, they transmit it through interpersonal channels of communication to less exposed individuals. Katz and Lazarsfeld introduced the still relevant notion of opinion leader, that is not intended as an authoritative or economically powerful individual, but rather as the closest member of his social group to the media exposition and therefore the one who becomes the expert in the media sector. Essentially the two-step flow of communication theory takes into higher account the influence of personal contacts over the media influence alone. In other terms, mass media have a significant role in the communicative effectiveness but they are not solely responsible for changes of opinion.

In fact, the research of Lazarsfeld, Berelson and Gaudet (1944, People's Choice) and then again the study of Katz and Lazarsfeld, examining the role of social groups and inter-individual relations in media use, inevitably brought to light the consideration that mass media would produce selective influence.

This observation suggests that the audience appears gifted with the ability to select, in much a clearer way, all the information materials they receive. Nevertheless if people tend to expose themselves above all to mass communications according to their own attitude and interests and to avoid other content and if, moreover, they tend to forget these other contents as soon as they see them in front of their eyes and if, finally, they tend to misrepresent them even when they do remember them, then it is clear that mass communication will most likely not

² Personal Influence: The Part Played by People in the Flow of Mass Communication

change their point of view but perhaps reinforce the pre-existing opinions ³.

Talking about the two-step flow of communication theory (and therefore the concept of opinion leader) we can not help but notice the proximity to the concept of influencer, used within social media studies. The main difference among the two is that, where Katz and Lazarsfeld's model is "only" able to influence his personal network, influencers are people who use their network visibility to ensure a multiplier effect in the dissemination of messages ⁴.

³ Klapper, 1960

⁴ Thought of Gili, 2005; Sorice, 2005, 2009

1.2 - The concept of live stories on instagram and facebook and the agenda setting theory

The concept of live stories on instagram and facebook and the agenda setting theory
At the same time, social media is one of the main fields of application for the concept of participative culture. Calling to mind Jenkins' studies, in principle the concept of networked studies was used to define social media, which refers directly to the idea that individuals are being increasingly connected and engaged to the media ⁵.

Actually it can be said that social medias are born as sociotechnical artefacts ⁶ or as a media subsystem ⁷. With the arrival of the Coronavirus, a debate has opened around the role of influencers and the future of influencer “marketing”. On one side, some argue that 2020 will be the year that will put an end to this phenomenon while others support the thesis that influencers, during this period of health emergency, have had a fundamental social role becoming more and more points of reference for the dissemination of positive messages and social awareness or important charitable initiatives. The lockdown period has had a strong impact on everyone's life, bringing out more and more the need to communicate, share and establish authentic relationships through social networks. A trend confirmed by all platforms that in recent months have seen an inevitable increase in connection time by users and an unprecedented increase in interactions between influencers and followers on Facebook, Instagram, Twitter and YouTube. Pinterest, a visual discovery app with more than 335 million active users, has also provided influencers with an even deeper opportunity to connect even more deeply with their community by publishing their content and pins, useful to help people find inspiration to improve moments in their daily lives.

This evolution of social networks has led to an enormous increase in the visibility obtained by influencers and their media power has been growing. A more important role used to support and launch solidarity initiatives and donations to defeat the Covid-19, but also to tell the story of everyday life at home. The relationship of trust that one creates with one's followers is born and strengthened through the spontaneous and simple narration of moments of daily life on different social networks. In fact, users choose to follow profiles that offer real, quality content, driven by the need to rely on someone to ask for advice or to share their moods, just as they would do with a friend. During this

⁵ Bentivegna, Boccia Artieri, 2019

⁶ Fausto Colombo's media definition

⁷ José van Dijck, 2013

pandemic period, the change in content production remains a central point. Indeed, the lockdown, in its hardness, in addition to being an opportunity to differentiate content, also becomes an opportunity to shorten the distance with its followers. According to Leonardo De Carli, YouTuber and influencer with more than 1,5 millions of followers, the events as we have known them up to now will take time to get back to being organised like they were before, but it may be useful to use this period to make there a real differentiation of content that were all starting to look alike. Still in his opinion during this period there has been a rapprochement of the influencer to his audience, through more natural content. The totally unexpected scenario following the outbreak of the Covid-19 emergency opened the influencers to new perspectives. The first to fully grasp the evolution of languages and content were, and will be for Phases 2 and 3 as well, those influencers who were able to best interpret the role of content creator, thanks to the publication of spontaneous and authentic messages. What gave a boost to the social role of influencers during the lockdown period was precisely their ability to give life to energising messages, narrations perceived by their followers as authentic, creators and shapers of the future. But not only, in addition to entertaining and producing creative content, their role has been informative and focused on respecting the rules in this new phase, on how to live the rediscovered public sphere spaces shared in compliance with government regulations. The challenge from now on, both for influencers and brands, will be to know how to accompany us in the new phase, keeping this approach alive.

During this unprecedented period we discovered new functions in the social media world. Our rhythms, our habits in the outside world have been replaced by an inside life, leaving more time to cook, to do some physical activity indoors. In this situation, the live stories on Instagram, facebook and on the other social media have proved useful in keeping morale up and providing advices, points of view or simply ways to fill the day. Many celebrities and influencers have shown their humanity, approaching the masses, creating more sincere relationships. In fact, during lockdown time, day after day people found more reassurance in knowing that everyone was on the same boat, forced to stay at home for everyone's sake, celebrities included. This situation created the possibility to strengthen the online community, where influencers started showing their daily workout, chefs started sharing how to make their specialties or just some delicious food easy to make at home. What became even clearer during this time is the need that people have to be guided by their idols and role models. Social media live stories, that before were just a way to communicate, now becomes essential. People needed to see that even their favourites celebrities have the same everyday problems as them.

Rosario Fiorello, one of the beloved faces of Italian television, is a clear example. He used to tell us his difficulties in adapting to this completely new phase, from how he tries to avoid spending too much time on the couch and empathising with those that can not find the force to work out, to his rediscovered relationship with his wife and sons. Not to mention the huge success that all the live stories between celebrities have encountered, telling the audience some anecdotes of their past they want to share, for example the live stories between one of the greatest number ten in the history of Italian football, Francesco Totti, and one of the greatest striker of the last thirty years, Christian “Bobo” Vieri. People, in this such atypical moment, feel the need to know they are not alone, that they are not the only one having a rough time being locked in the house but that is the same for everyone, that everyone now has to get in a long queue to do the groceries at the supermarket or the common lack of motivation and the risk of gaining some weight by not moving anymore. People, on one hand need to feel reassured, on the other hand are too easily influenced into following the general flow. As a matter of fact, people express and manifest their opinions in relation to how and to what extent they perceive them as shared by their social group. This means that media can define and propose an opinion as if everyone agrees on it, regardless of whether they really do, influencing the actual opinions of the audience. This is more or less what is also said in the theory of the spiral of silence, proposed by the German scholar Noelle-Neumann in 1980 and later on analysed critically by Cristante in 2004. Strictly connected to this theory we can find the concept of the informational social influence, well explained in the conformity experiment conducted by Solomon Asch in 1951. Asch conducted this experiment to investigate the extent to which social pressure from a majority group could affect a person to conform with their opinion. On a slightly different level this can be applied to the relation between the “social media elite” (VIPs and influencers) who set the standards and the masses who blindly follow them, buying items they didn’t even know they needed and, even worse, believing in something just because the majority of people does.

Similarly related to this very concept, it is noticeable the agenda setting theory ⁸, based on the idea that individuals tend to include or exclude from their knowledge what media include or exclude from their content. The theory believes that the mass tends only to give importance to what is emphasised by the media, as we can also see from the famous sentence used by the authors of the theory themselves, McCombs and Shaw: “[the theory] doesn't say what to think, just what to think about”⁹.

⁸ McCombs and Shaw, 1972

⁹ This theory dates back to 1972

In fact, unfortunately, individuals not only know the dominant problems through the media and their representatives, but they also learn how much importance to attach to these problems based on the emphasis the media place on these issues.

1.3 - The rediscovered role of Netflix and Amazon Prime and their global impact

Sofa and TV series are an irresistible combination in this moment of lockdown. In the series of digital streaming platforms we occupy a large part of our quarantine time ¹⁰. The episodes, that simply follow one after the other, are reassuring, cyclical and orderly. Passive listening reassures us, and our reduced mobility lets us imagine that we are relieving the world of our devastating polluting impact. And yet, while we try to fight boredom through frantic streaming, we continue to pollute the planet. Our tele-dependence, in fact, has a considerable impact on the environment. A recent study by the NGO Shift Project has attested how our online activities, both on smartphones and PCs, pollute more than the entire aviation industry. It's more than enough to think that since March 17 Netflix in Italy has recorded a global increase in access of 332%, the newborn Disney Plus an increase of 290% and Prime Video of 266%. From 2013 CO2 emissions increased by 450 million tons. And in 2018 the viewing of streaming movies and TV series generated the equivalent of the annual emissions of a country like Spain in the world.

Also, the problem of binge watching during the Coronavirus was the subject of a research conducted by "Save on energy" with the unequivocal title: "Netflix &... COVID-19: The environmental impact of your favourite shows". The study has analysed the environmental impact of Netflix productions and related it to the equivalent of a car trip. It found clamorous results: a film like Birdbox, which has recorded over 80 million views, is equivalent in terms of pollution to a journey of almost 237 million kilometres and the emission of over 66 million kilograms of CO2. A boom that has recently forced streaming giants such as Netflix to respond positively to an appeal by the European Union to reduce the resolution of transmitted video in order to avoid overloads and short circuits in the network infrastructure. In particular, the European Commissioner for the Internal Market, Thierry Breton, stressed that streaming platforms and telecommunications network operators have "joint responsibility for taking measures to ensure the smooth functioning of the Internet during the battle against the spread of the virus".

¹⁰ More than 5 and a half hours per day according to the data of the survey published on "Sette"

During a global pandemic, reducing all kinds of contact and staying in quarantine is vital to contain the risk of spreading the virus. As a result, millions and millions of people around the world are now forcing themselves into their homes to prevent and to be safe from the spread of Covid-19 in the community. While this is a heroic and necessary challenge, there is also a risk of boredom and isolation, which can lead to depression, among many other factors. Many people are turning to their streaming services to alleviate their monotony. The problem is that many people cannot afford subscriptions, especially at a time when many people's livelihoods are already at their extreme limits. A petition to get 60 days free access to streaming platforms such as Netflix, Amazon Prime and Disney+ is collecting more and more signatures. It was launched in April and in a month it has exceeded 60,000 signatures, getting closer and closer to the target of 75,000. Philip Koals, the petition creator says: "This is a responsible strategy to maintain common health... I appeal to all these companies, which can help make voluntary isolation more comfortable and therefore more successful, and ask them to do their part and relieve our stress caused by quarantine." Therefore, offering support to the community for 60 days would be a kind of investment for the future, a gesture to build user loyalty. But actually nothing has changed after all, apart from a slightly worse quality of services offered by streaming platforms.



Homer Simpson partaking in a marathon-watching event of his own.

(Photo: FOX / Via
thealexandriaarchives.tumblr.com)

1.4 - Social media and music - concerts 2.0

With the theatres closed and the advice not to go out, streaming concerts can be the way to keep enjoying live music from a safe distance, from behind a screen. In order to resist the fear of the coronavirus epidemic, which is the country a hard time fighting it, small musical interludes can bring a sigh of relief and lift the spirit at least for a while, and maybe relieve the loneliness of those who have to stay indoors for weeks. Lately, Italian music reacted to the Covid-19 emergency launching itself into the future of live performances with many programs and ideas including “A-LIVE”, a program of online concerts that allows a relationship between artists and audience in real time to build an unprecedented live experience. With this new platform, artists will be able to organise a real virtual tour, with limited number concerts taking place in various cities, to meet the fans after the concert with exclusive videos and, above all, artists will be able to play seeing and feeling the energy of the audience thanks to a new technology that combines real elements with virtual elements, thus recreating an audience that is actually not there.

Also the initiative taken by Fortnite deserves more than a mention. The videogame/phenomenon of these last years able to glue to the screen millions of kids and not in front of the television screens in these days of quarantine, is managing to keep together the video games crowds that require fun, sharing and above all 360 degrees entertainment. A planetary success has been achieved by Travis Scott's concert on the game form, clearly showing us one of the possible scenarios of the next "live" music. Actually this was not the first event of its kind because Marshmello's Giga DJ Set (at the civil registry Christopher Comstock) of last February 2019 just on Fortnite was the real seminal moment in the history of "virtual music" breaking the wall of skepticism. Although, this time, Travis's concert aired on Fortnite broke the record for simultaneous connected players on “Battle Royale mode” and over 12.3 million people from all over the world participated in the arena having fun and listening to the man of the hour. The Texan artist on this occasion took the opportunity not only to make the official video of his last song "The Scotts", in collaboration with Kid Cudi, but through Fortnite he also promoted the garments of his clothing line. The Travis Scott event for Fortnite, "live on air" in April 2020 took only few hours to become one of the main topics discussed among fans of video games and technology so much that chats and conversations on various social media started trending, touching peaks of millions and millions of clicks. Of course Travis Scott couldn't help but comment on Twitter and his socials on the emotions he felt: "Honestly, today was one of the most incredible days of my life. I love all of you guys.

I know these are strange times for all of us, but knowing that for a moment you were able to have fun wherever you are in the world is incredible. I love you all with all my heart. Gang’’. In any case, Fortnite is continuing to propose it online since several replicas have been scheduled, so as to give everyone the chance to "re-live" the event and understand what it means to be projected in a possible future that many will want to replay.

As stated before, the live entertainment industry is among the sectors most affected by the shutdown of activities to stem the spread of Coronavirus contagion and drive-in concerts are of course among the solutions attempted to attract audiences to real venues to enjoy their favourite music while maintaining social distance. The first to try his hand in the United States was Keith Urban. The country music star performed a surprise live show at a drive-in movie theatre in Nashville, a first experiment of what concerts could be like in the age of social distance. The drive-in also caught on in Sydney where Casey Donovan, an Australian singer who became famous after winning the television format 'Australian Idol' more than a decade ago, performed in a parking lot in front of about 40 vehicles. The free concert allowed fans to listen to live music for the first time in a long time. But of course they had to stay inside the car to enjoy it. "I missed live music so much that I even come to see it in a parking lot, in my car," one viewer explains. To ensure physical distance, the audience is not allowed to leave the car, but they can tune into a dedicated FM radio station to get high-definition sound or simply not have to roll down their windows in case of rain. Musicians around the world have had to adapt their way of interacting with audiences due to the closure of concert halls, and many have chosen the path of online performances in virtual concerts or, as in the case of Nick Cave, Neil Young, Rolling Stones and others, offering fans special content from their archives as a substitute for 'live'. Sadly, concert venues are expected to be among the last to reopen due to the rules of social distancing as also shown by Italy with all its cancellations and postponements to 2021 summer festivals and in a very similar way also the cinema drive-in could discover a second success, without the need to decrease the capacity of cinemas to respect the social distancing.



Danish singer Mads Langer performs for an audience of motorists in Aarhus, Denmark, on 24 April. (Mikkel Berg Pedersen/Ritzau Scanpix via AP)

Chapter 2 : Platform society

2.1 - What is it, its concept and role

“[The Platform is] an extremely valuable and powerful ecosystem that quickly and easily scales, morphs, and incorporates new features, users, customers, vendors, and partners”¹¹. The platformisation of education has led to a fierce contestation of public values, which are traditionally anchored in institutions and professionals codes that are increasingly bypassed and uprooted. The mechanisms of datafication, personalisation, and commodification have penetrated deeply into the edifice of education, not only transforming the content of learning materials and students’ learning processes but also affecting pedagogical principles as well as the organisation of schools and universities. Datafication and personalisation indeed raise many social, ethical, and normative questions concerning the kind of education children may engage with the future, As a result of commodification, learning data have become a valuable currency. In a connective world, technological interoperability is a vehicle for commercialisation and educational platforms have become a battleground for conflicting private, corporate, and public interests. So the protection of education as a common good warrants extra vigilance in what is still considered a public sector, particularly in Europe. The platform society is entangled in the ecosystem’s techno-commercial mechanisms that push the marketisation of public services and public sectors. Since there is no public space carved out in the infrastructural core of platform society, technocratic solutions to social problems increasingly define the agendas of governments and public institutions. At the heart of this ideological clash not only lies what Morozov (2013) has called “technological solutionism” but also a neoliberal political agenda where formerly defined public and government functions are administered toward yielding private profits. Public funding is increasingly lured toward platform projects’ capitalising on data-based, technologic-intensive forms of teaching and learning, at the expense of investments in human-based, labor-intensive pedagogical and didactic skills. Datafication and personalisation are pushed as the mantras of a new educational paradigm where human judgement is increasingly replaced by a product of predictive analytics that has acquired an aura of objectivity and empirical groundedness. However, there is as yet very little research evidence to substantiate the broad claims implied in this paradigm. Subsequently, the expansive ambitions of educational platforms as illustrated by their investment in scalable technology raises the question of efficacy: does scalability make education more effective or efficient? The automation of resources and learning systems raises the prospect of

¹¹ Phil Simon, *The Age of Platform*, 2011.

globalised “one-size-fits-all” education, a prospect that takes little account of the local and unique contexts of learning and teaching in this very complicated period. Although platforms like AltSchool and Coursera promote “personalised mass education” as a unique selling point, what is behind the drive to scale technology is indeed global standardisation. If online courses become the standard container for global education, shipping can be facilitated worldwide, from Shanghai to San Francisco, by a few global “connector” companies that create path-dependent distribution chains. While Coursera and Uber have much in common in terms of their underlying platform mechanisms, education differs from transportation in that the former is mostly about the uniqueness of each person, each place, and each cultural context.

In a sentence taken from Platform Revolution, a crucial reference text by Choudary, Parker and Van Alstyne ¹², the company-platform is: "a new business model that uses technology to connect the people, organizations and resources in an interactive ecosystem where incredible amounts of value can be created and exchanged".

The organisational and business model of platform companies is in fact the foundation of contemporary companies that grow faster, immediately expand worldwide and revolutionise the logic on which entire industries have been based on for decades. An example? What hope could two individuals without financial resources have in 2007 to storm and subvert the hotel industry? That's what Brian Chesky and Joe Gebbia did when they designed the Airbnb platform, which in just 9 years from nowhere was valued at \$24 billion ¹³. But Airbnb is not an isolated case. The business-platform model unites a number of organisations whose success is extraordinary and undeniable - companies such as Microsoft, Google, Apple, Intel, eBay, Amazon, Uber, Facebook. Most importantly, the platform enables interactions between manufacturers and consumers with a value outside of the enterprise - as the striking cases of Airbnb and Uber make clear on the fly. This represents a clear discontinuity with traditional economic models, activating non-linear paths of valorisation from which both those who enter the platform for co-productive purposes and those who enter it to use its services can benefit in different forms. Platform - companies have been expanding in the digital ecosystem very rapidly for several years, so that it is difficult to understand how much they are changing our habits and ways of thinking. Companies that are completely analog, to adapt to this change, are also expanding in the IT world, with the aim of being competitive with the digital native ones.

¹² Choudary is interviewed in this same supplement

¹³ (more than the Marriott chain and more than any other hotel chain in the world)

What we are experiencing is in a way the inverse revolution of the industrial one. If the latter has brought the power of machines inside factories, the digital one has strengthened the human intelligence and transferred it inside companies, transforming it into a business resource. Platform - companies, in fact, are social organisations that operate in a network with a global impact and develop more easily than others because they exploit the interactions and collaborative logic among consumers, making them content producers. To give an example, the Airbnb platform was valued at about \$24 billion within a decade, although it doesn't own any apartments, but bases its business model on the ads posted by its users.

2.1.1 - From platform to *platfirm*

According to “Platform Revolution”, the platform-company is a “new business model that uses technology to connect people, organisations and resources in an interactive ecosystem where incredible amounts of value can be created and exchanged. The rise of the Platform Enterprise report, published by the Center Global Enterprise, represents a worldwide collection of all platform - companies of different sectors (media, travel, books, music, energy, transport, etc.). For these types of companies, which develop through a digital platform, a term has been coined: *Platfirm*. Some examples of Platfirm can be found social networks like Facebook, Twitter, Snapchat, e-commerce like Amazon and Zalando, travel booking sites like Booking and Airbnb, transport sites like Uber, music services like Spotify and so on. The difference between “firm” (traditional company) and “platfirm” is simple: a traditional company is characterised by an infrastructure and a value chain that is organised to deliver its product/service to the final customer.

A “Platfirm”, instead, is a more dynamic reality, which is structured as a platform operating system, where the delivery of the product/service depends, almost or completely, on the final customer and his interaction with others. The Platfirms that are emerging in many sectors have come to change not only business strategies but often also the dynamics of the international markets in which they operate. The characteristic element of web 2.0, therefore, is not only the sharing of contents and technologies, or the discussion of topics or the simple provision of a service, but the creation of "ideal spaces", places of human relations in the digital environment. With reference to social media, Silverstone spoke about the creation of mediapolis ¹⁴, public spaces that modify traditional offline political and social relations. Although they retain some typical infrastructure properties, they "provide a service and are incorporated into social practices". Platforms have their own specificity. According to the sociologist Davide Bennato, platforms distinguish at least four main meanings: computational, architectural, figurative and political. But, to these meanings, for Bennato, a fundamental characteristic must be added: the platform is "an enabling construct, a tool that facilitates the realisation of something". A device that makes communication and the creation of shareable content quick and easy. Precisely because they are placed in a social context, the platforms are sensitive to contextual changes, including structural changes, because they are determined by a continuous participative restructuring.

¹⁴ (Silverstone, R., 2006)

2.1.2 - Web 2.0

From the point of view of its organisational structure, the set of digital platforms is composed of different elements, families of applications often integrated with each other, subgroups and functions. First of all, in web 2.0 you can recognise macro-sets that describe similarities or "conceptual families": wikis, social-networks, blogs and micro-blogging, Instant Messenger (IM), and so on; then you can identify those functions that these macro-systems use to interact with each other, as a third person, and with users: file sharing, mash-up and remixing, e-learning, tutoring and gaming. From the point of view of the cultural environment, web 2.0 is mostly described as an attitude, dominated by playful logic (gaming), i.e. by a structure that follows the role-challenge-levels-prize scheme. Also the concept of Operating System is slowly replacing itself with a more generic (and less technical) "app environment". The dynamics of social recognition of Web 2.0 are based on negotiated identities, rather than on defined individuals, on digital reputation rather than, once again, on authority. In this case, a ground-breaking myth of the web is the "wisdom of the crowd" that supplants the authority of the individual "aristocracy of intellects".

But why talk about the founding myth? In what sense are we witnessing a more or less spontaneous construction of a web 2.0 mythology? Perhaps because, like everything human-made, a "collective narrative" (mythos) has been built around the web, practices have been codified and regimes with a symbolic meaning and signification have been built. The myth, in fact, has not only the purpose of justifying some unprecedented phenomena, but also the power to convey values, to transmit messages, to impose meanings. And so, just as in ancient Greece the presence of the gods justified the natural phenomena generated by causes unknown to man and guaranteed the order and beauty of the world, so today the set of linguistic metaphors of web 2.0, of which the contemporary collective imagination eagerly feeds, identify social dynamics of which we still do not know well the mechanisms, which we still have to analyse with critical sounding. Think, for example, about the metaphors of the "virtual communities", of the idea of a net¹⁵ that is homogenous and equivalent, democratic, on top of which the myth of net neutrality is put. Moreover, the construction of a web 2.0 mythology is not only due to the innate instinct of *homo symbolicus* to give a name to things, to the adaptive power to create symbolic worlds: the evocative and generative power of words. The soul of commerce penetrates the fabric of language, becomes its flesh and blood, genetically modifying it.

¹⁵ Often written in capital letters as a superhuman entity

In fact, managing language means managing the meaning of communication, deciding its truth. All these characteristics and attributes are referred to the digital platform because it is the web 2.0, it is the basis on which conceptual families, subsets and functions are distinguished.

But this new cultural dimension of the web, which certainly has its advantages, conceals its rhetoric and ideology, which is often underestimated or unnoticed. It hides, for example, the conditioning of the web by the market, policies of censorship and social control, actions to restructure collective and shared memory, remodulation of the perception of identity, extension and confusion of the public sphere into the private one, modification of the perception of time and reality, transformation of individual social relations, and so on. In short, the theses of the "integrated" of social web need to be subjected to critical vigilance, to be verified, not to be accepted in a passive and totemic way. The conceptual families (macro-level) of web 2.0 are to be considered as frames with blurred boundaries, whose specificity lies in the prevailing communicative function, i.e. in the communicative remedy ¹⁶ and, finally, in the mutual technological contamination involved in digital convergence. Considering, in fact, that from a communicative point of view, as platforms, all these frames perform a mainly theoretical function, their main purpose is the verification of the connection, the confirmation of the contact. The "I like it" button of Facebook and the "RT" of Twitter, for example, are devices that, by detecting the user's activity, first of all attest the presence of the user. In addition, as you can see, recently Facebook has already incorporated some features of Twitter ¹⁷, such as the news following and, lately, with the practice of labelling through #hashtags. It is not surprising, then, that one of the intrinsic characteristics of social media is their ability to communicate, to which a certain degree of technological contamination must always be associated, namely the use of functions usually associated with specific types of platforms. Think, once again, of Twitter, which was first born on mobile phones as an application to be used to send 140 character SMS and is developing increasingly in the form of social-network, activating asymmetric practices of social relationships: follower/following, selection of favourite tweets, creation of lists and so on. Remediation and technological contamination fully carry out the logic of the convergence of hypermedia, which Nicholas Negroponte had already talked about with regard to the technological synthesis between different media; a synthesis that Henry Jenkins then extended also to the contents, with the concept of

¹⁶ Bolter and Grusin, 2002

¹⁷ Technological contamination

convergence grassroots. (18). It is clear that it is necessary to consider social media as platforms only in a weak sense, i.e. in the sense of computer tools, and how the communicative life of social media is more complex and elusive to a single categorical definition.

¹⁸Jenkins, H., 2007, pp. 131-178, 348: "informal and sometimes unauthorized flow of media content. It develops when it becomes easy for consumers to annotate, modify, expropriate and redistribute media content". See also Jenkins' blog, <http://www.henryjenkins.org/>

2.2 - The role of educational platforms and e-learning

Before COVID-19 The Italian school was strenuously resisting change, perched on its traditional task of literacy, and therefore inclined to defend itself from the dangers of digital, climbing the bastions of discipline and the presumed duty of cultural transmission. Nothing new, moreover; in fact it had already happened: the world of education during the seventeenth century had reacted vigorously against the demonic instrument of the printed book. Filippo di Strata, a Dominican educator, tutor and religious person, wrote that "The world has gone on very well for six thousand years without the press, and there is no reason why things should change now. The press will corrupt the young people who will have easy access to scandalous texts; the vernacular translations of the holy scriptures will give rise to gross errors; the volumes that come out of the printing presses are filthy objects, unworthy of being in respectable homes; buying them, finally, will finance a race (the printers race) that squanders earnings on wine and prostitutes. Est virgo hec pen, meretrix est stampificata".

However, he was wrong, and in fact in the course of time the world of education has, so to speak, "digested" the novelty of the press, tracing the appropriate countermeasures, and maximizing its advantages: the adoption of the textbook has in fact combined the principle of authority, proper to oral tradition, with the advantages of serial reproduction, which has brought knowledge in schools and in every home, up to the present day, completing a secular path of mass literacy. The new school model, made up of professorships, desks, books, pens, registers, numerical evaluations, detailed timetables and homework was first immortalised by the Jesuits, in the famous treatise *Ratio Atque Institutio Studiorum Societas Jesu*, and then definitively sanctioned in the era of the Industrial Revolution, as it was opportunely identified as an effective tool to bring all students to a minimum standard of knowledge, through the introduction of compulsory education.

But what happens to school when the traditional task of passing on knowledge is challenged by the swirling information society? Is the traditional way of organising education appropriate for today's young people, the so-called digital natives? What kind of authority can the teacher have when the information he used to be the exclusive source is today quickly accessible and free of charge? Can we still think about the concept of educational standards, when the historical process of mass literacy is over, while other issues are emerging, such as demotivation, dispersion, emotional and critical illiteracy and the slaughter of talent? Wouldn't it be better to move from the concept of standards to the more pedagogically dense ones of personalisation and citizenship education?

As the European Recommendation on the Modernisation of Education Systems (2018) states, "schools, traditionally a place of knowledge acquisition, are now flanked by many other sources of accessible information. Modern technologies have unleashed the education, opened opportunities for multidimensional educational activities and created an educational space. An important challenge is to make schools the most interesting place in this space. The role of education systems is to form a complete person, which is then realised in the professional, social, cultural and civic spheres in a diverse and global environment". These instances were already alive before the Coronavirus, although very often feared and removed. Today, however, there is another pressing question: can our children return to the hive classrooms, squeezed next to each other in cramped spaces, prepared for the classic pattern of lesson and controlled individual exercise? The answer is no, at least in the immediate future. But that doesn't mean that distance learning is the solution: Tofu is not cheese, as Yong Zhao ironically commented on his Blog. It's obvious that we need to go back to school, but will it be in the same way as before?

In reality, the current contingency may represent an extraordinary opportunity to rethink the variables of the so-called implicit curriculum: spaces, times, groupings. Already in the above-mentioned publication the hope was expressed that, where pedagogical theory had at least partially failed, the technological factor could succeed: the new media, in fact, require radical changes in the way of conceiving the relationship between teaching and learning. Now, four years later, the pandemic emergency can function as an unprecedented amplifier (or accelerator) of change, certainly starting from hygienic motivations, but soon reaching the plan of pedagogical and didactic instances.

Let's try to indicate some possible transformative coordinates:

- from the classroom to the articulation of differentiated spaces to search, collaborate, connect in presence but also remotely;
- from school hours to work time, not necessarily confined within a rigid framework;
- from the class group to small groupings (cooperative teams) in presence but also remotely.
- from rigid and mnemonic teaching resources to a multiplicity of sources, both paper and digital;
- from former cathedra teachers to facilitator teachers, directors of learning experiences.

The dislocation of physical and virtual spaces, the collaboration in presence and at distance, the intelligent use of technologies should make it possible to deal with the current emergency not defensively, but actively and creatively, not limiting educational opportunities, but amplifying them out

of all proportion. Organisational flexibility and a blended model will help to avoid seeing changes as a pure response to the virus, but actually as the future of the educational institution, capable of not stopping at mere regulations implemented in the name of security but of relaunching and transforming itself, imagining a new organisational model, in the name of the education and educational success.

In short, it is not simply a matter of administering a crisis, but of drawing from it those indications that take us forward, instead of defending the status quo. As Albert Einstein said, the crisis is always an opportunity.

So, if the COVID-19 warns us that traditional education is dangerous, because it prevents social distancing, the paradigm shift tells us something stronger and more radical: the traditional school is dying, because it hinders creativity, collaboration and personalisation. Digital education helps us now, in the emergency, but it will be the scenario from which to start again even when, hopefully as soon as possible, we will return not to our "classrooms", but to the "educational space".

The world of education ... is never a repetitive action, but the art of growth, as the Pope Francesco says at the Plenary of the Congregation for Catholic Education.

2.2.1 - The change of an age

"It can be said that today we are not living in an age of change as much as a change of age. The situations we are experiencing today therefore pose new challenges that are sometimes even difficult for us to understand. This time of ours requires us to live problems as challenges and not as obstacles" ¹⁹.

The changes of the era mark the search for new paradigms in all areas of living and social action. In the current context marked by the epidemic - alongside the effort and generosity of priests, religious people, men and women in our health care system and without forgetting people working in transport and those involved in the production chain of basic necessities, the military and the police - one area in which an important challenge has been faced is that of schools, of the entire training system.

The cinema abounds with stories about pedagogical models in schools. A few titles are enough to evoke the wealth of glances. First of all the enthralling Professor John Keating, played by Robin Williams, a professor of unconventional methods in America at the dawn of the 1960s in Peter Weir's *Dead Poets Society* (1989). Again, from Italy one of the most effective portraits of front-line teachers for the educational emergency is that of Prof. Vivaldi (Silvio Orlando), professor of Italian in a high school on the outskirts of Rome, in Daniele Luchetti's scratchy but also hilarious *La scuola* (1995). The last suggestion, with a leap to the present day, comes from the French comedy *Almost Enemies* (*Le brio*, 2018) by Yvan Attal, the story of the clash between a rigid and edgy professor of law, Pierre Mazard (Daniel Auteuil), and a young student, Neila Salah (Camélia Jordana), in search of redemption from prejudice and above all in search of a future. As these cinematic examples suggest, and from a largely culturological perspective, the renewal of pedagogical models must first of all take note of the transformations in communication paradigms.

Fundamental scholars such as Marshall McLuhan, Walter Ong or Eric Havelock have clarified how the media, in their presentation on the social-historical scene, have in fact influenced not only language but also cognitive processes and pedagogical models, according to a time scale that is now "canonical" in studies on cognitive technologies. "If we look at the near and remote past of the world of communication, we see that the most important revolutions that followed one another over time were three, namely: the chirographic revolution (following the invention of writing in the 4th millennium B.C.), the Gutenbergian revolution (following the invention of printing which took place around the middle of the 15th century) and the electrical and electronic revolution (following the

¹⁹ Papa Francesco, Florence, November 10, 2015

invention of the telegraph and, subsequently, of radio and television)”²⁰. Today we are protagonists of what Ong, developing the concept of secondary orality, calls secondary alphabetic culture (linked to computer writing), and secondary visual culture referring to video production and virtual reality. To every communicative age correspond educational models that make orality, writing, media and digital as many resources for didactic mediation: word and imitation, book and analytical reading, image and symbolic synthesis, multimedia and transcodic navigation provide teachers with a vast linguistic keyboard with which to develop the learning of the subjects in training.

In particular, the universe of digital culture and online communication is now directly involved in the innovation processes of the Italian educational institution. In these weeks of the spread of an unknown virus that sows death and anguish, the Italian and European governments have passed the necessary regulations to contain the spread of the virus, including the closure of schools and universities. A host of teachers and professors have generously provided their time and energy for learning methods that, at least in Italy, are still sporadic experiences. The emergency has inevitable made a sort of mass experimentation of the "distance school", through the use of digital solutions. Precisely because this is a change of epoch and not an epoch of change, in an attempt to fully understand this phenomenon, it is necessary to assume the awareness that online learning "is not second to teaching in presence. It is not simply teaching at a distance. It is an entirely different way of learning"²¹. We would therefore like to point out some lines of reflection that keep this perspective in mind, which goes beyond the idea that the media are simple tools: they are first of all culture, a field of co-construction of speeches, texts, reports, and in particular of meaningful learning.

The theme is also well present in the study seminaries of the Congregation for Catholic Education of the Holy See, which was the subject of the last Plenary of the members of the Dicastery. Just as the epochs of the past gave rise to models of learning knowledge²², so today, in order to elaborate an updated pedagogical model, it is necessary to clarify what is meant by e-learning. This concept is presented as an evolution of the previous concept of distance learning because, "when the Internet starts to allow the development of computer mediated communication systems (cmc) through which to facilitate the synchronous (chat) and asynchronous (forum) interaction

²⁰ M. Baldini, in Dizionario della comunicazione, 2009, p. 21

²¹ W.A. Draves, 2002, p. 43

²² For example, in the printing age the approach to knowledge took into account the hierarchy of linearity and consequentiality

of the teacher with the students and the students with each other, the transition to third generation distance learning (from the mid-1990s onwards) is accomplished”²³. In this case, multimedia - which allows the constant updating of online content - and the possibility to implement teaching strategies based on horizontal cooperation between students form the basis of contemporary e-learning.

Currently, the enormous possibilities in the didactic field offered by the diffusion of the Net and the speed of connections show how it is necessary to specify the terminology as well. Today we speak of distance e-learning in the case where the training course is delivered completely online, of blended learning or complex learning, in the case where it alternates appointments in presence and others at a distance ²⁴. This change of epoch involves both the reflection on the disappearance of the asymmetric and hierarchical relationship of the patriarchal society²⁵ and the search for learning models different from the traditional ones. It is not indifferent the eclipse of the idea of authority for the world of education, the dissolution of the figure of the father and the emergence of what is called the horizontal society ²⁶, "in which all authority is transferred to institutions and rules, laws and rights. Only in this way can a feeling of trust in our strengths come to life in all of us, capable of harnessing the never dormant and always different forms of privileged power, pastoral or oligarchic, of dogma or wealth” ²⁷.

The horizontal society (multipolar reticularity) finds in digital media a strategic ally. Today everyone experiences that "the influence and status of the president, the priest, the parent, the professor, the policeman are not what they once were, nor is the power of speech, or the fear of the law. And these are the signs of a deeper dissolution of the bonds that bind us, of a loosening of the reins that control us, of the disintegration of a social order" ²⁸. That is, we live immersed in a social context in which the constitutional relational asymmetries of the processes of identification have been diluted to the point of almost disappearing. Most adults today, who in fact embody the professional figures of professors and teachers, have lived through a different era in which "the word of the teacher

²³ P.C. Rivoltella, Dopo la formazione a distanza. Tecnologie, educazione e formazione in Italia, 1995-2008, in "Educação e Sociedade", September 2008

²⁴ See R. Nacamulli, 2003

²⁵ See P.P. Bellini 2018

²⁶ cf. L.M. Friedman 1990

²⁷ M. Marzano, N. Urbinati, 2017, p. 28

²⁸ R.A. Solo, 1980, p. 253

as well as that of the *pater familias* appeared to be a word endowed with symbolic weight and authority regardless of the contents it was able to convey. It was the power of tradition that guaranteed it. The word of a teacher and of a father acquired a symbolic depth not so much from his utterance but from the point of utterance from which they came out. The symbolic role prevailed over who really embodied it more or less defectively" ²⁹.

In the context of middle and high schools, the emergence of such an epochal change lies in the constant appeal by teachers to insurmountable efforts. The problems generally lie in the composition of classes that no longer possess cultural homogeneity (and this is a concrete problem, but perhaps also a challenge and a widening of our horizons) or in an evident disparity between generations and especially between social classes in their approach to the use and appropriation of digital technologies. All this of course remains true and at the same time complex to manage, but the issue is more radical and cultural: the concept of authority has been lost. So "to have lost it means to have lost the foundations of the world, which in fact since then has begun to move, to change, changing with increasing rapidity in different forms, so that we are grappling with a multiform universe, where at any time everything can be transformed into anything else" ³⁰.

Once again, this fact can be accepted both as a sign of decadence and as an opportunity for cultural evolution, for restructuring the coordinates of meaning. In this case, however, a profound assumption of responsibility on the part of all training agencies is urgent. This change of scenery calls for creativity and prudence, competence and passion. As Pope Francis says: "This time of ours requires us to live problems as challenges and not as obstacles. In the university system we are witnessing, in this emergency situation, an organisation that shows greater knowledge and familiarity with non-traditional learning models thanks also to the start-up, in a normal situation, of technological poles and the development of specific pedagogical models of teaching on the Net ³¹, in which the winning logic is that of widespread integration. In this case, the asymmetric aspect of the relationship and the persistence of some trace of authority (which holds together recognised competences and trust aspects) certainly facilitate the path.

²⁹ M. Recalcati, 2014, p. 3

³⁰ H. Arendt, 1999, p. 134

³¹ For example, the Catholic University of the Sacred Heart with the Cremit Research Centre, www.cremit.it, or the UniNettuno Consortium, today the International Telematic University UniNettuno, as well as the European Commission that has been working on e-learning since 2000

"In the university context, the e-learning appears to be a mode more responsive to the needs of working students, ending up as one of the highest forms of adult lifelong learning. There are, in fact, more and more cases of full-time workers who, several years after their first hiring, decide to retrain by choosing an academic qualification: for them, being able to access online training activities becomes a traditional alternative participatory form "program for non-attendants""³².

If it is clear that we are facing a change of epoch that calls for anthropological and psycho-pedagogical reflection, there is still one more step to take. When we talk about distance e-learning or in the case of academic blended learning courses, the models differ in relation to the research underlying the design of the different platforms. The research activities that over the years have been carried out abroad and subsequently in Italy have highlighted the close correlation between communication technologies and cognitive processes, showing how the structuring of new teaching models moves from the centrality of the teacher to the centrality of the student, from the transmission of knowledge to the construction of knowledge; from passive and competitive learning to active and collaborative learning³³.

But what are the elements at stake in this renewed psycho-pedagogical model? Since it is not simply a question of substituting lessons in presence in lessons mediated by an interface, what characterises a learning model that takes into account today's cultural context? First of all, video lectures, i.e. lessons produced in virtual and post-produced studies. It is precisely post-production that constructs what is foreseen in the theoretical model, which foresees which pragmatic solutions can help the student in the learning process. The video lectures are indexed by topic³⁴ and they present hypertext references to in-depth material related to the topic the teacher is dealing with. There will also be bookmarks indicating the in-depth material (multimedia and web references associated with the topic dealt with in a given lesson or part of it). Once produced, the video lectures are delivered. But this is only the first step followed by the interactive classes through which exercises, intermediate assessments and exam simulations can be activated. The comparison during the interactive classes between teachers and students takes place only when the students already have a prior knowledge of the contents, facilitated by the tutor who indicates articles, essays and teaching materials that integrate

³² A. Garavaglia, in *Dizionario della comunicazione*, 2009, p. 846-47

³³ See M.A. Garito, 2006; 2015

³⁴ To help the student move from one content to another

the study of video lessons (model called flipped classrooms). Video lectures alone are not enough.

Other elements qualify the e-learning models. First of all, the presence of the teacher/tutor acts as a real organiser of the in-depth studies. In particular, the teacher/tutor initiates students to the procedures and processes that allow them to make full use of the sharing functions and applications of the interactive classrooms; finally, he or she proposes moments of synchronous practice and redirects the student in case of difficulty in following the proposed learning model. The collaborative project work phase is of particular importance. These are exercises during which students, accepting an exercise proposed by the teacher/tutor, "put their hands in the dough" in a collaborative way. The activities are many: they range from creative and collaborative writing to the design of technical documents such as a marketing plan, a business plan or methods of analysis and reporting. During the project work the teacher/tutor will entrust the moderation of the group in turn to individual students so that each student learns the responsibility of enhancing and managing the discussion of a team work. The platform, especially if proprietary, will be able to evaluate on its tracking system both the reviews created in a collaborative way in each session and the final product of the project work. Finally, it is important, always in the developed learning model, to prepare the Simulations of examinations. It is a question of the teacher/tutor proposing a structured task as could be the final exam of the course. The lecturer/tutor makes the test available to all connected students and sets the exam time. During this phase, students can talk to the teacher/tutor with specific questions and details on exam topics throughout the exam simulation. The assignment, released on the platform, will then be corrected and evaluated by the teacher/tutor. On the tracking system, students will find their own corrected papers, which will be discussed with the teacher/tutor in a subsequent interactive class.

So here is a change of era. What challenges does it involve in the educational field? Redesigning learning models and processes taking into account the changing societies (e.g. offering collaborative possibilities between academic centres in different countries or accompanying refugees to the completion or recognition of university courses). On the other hand, "a true citizenship is built in a network. Access to digital networks entails a responsibility for the other, which we do not see but is real, has its dignity that must be respected. The network can be well used to grow a healthy society open to sharing" (Francesco, 50th World Communications Day, 2016).

2.3 - Digital Capitalism

The emergence of an economy based on digital platforms, algorithms and AI has made inadequate the current legal framework and generated a major socio-economic crisis. In this paradigm conditioned by a few major global players, the citizen can still find in the State the guarantor of respect for his or her rights. During 2019, technology and rules have been debated for a long time. The large platforms are in fact subject to increasing scrutiny by regulators, legislators and civil society, especially from the privacy and antitrust points of view. Everything suggests that in 2020-21 the phenomenon could continue and even reach a turning point.

The digital world has outlined a new technological and economic structure, redefined the relationship between public and private and, at the same time, challenged a system of rules and interactions forcing individuals, companies and administrations to face the reality of a disruptive innovation that has multiple implications. At the centre of the scene are digital platforms, a central element and interface that allows the exchange of ideas and knowledge, goods and services, a sort of virtual market based on data that has drastically reduced all forms of intermediation accelerating a process of economic, social and cultural transformation. At the expense, rules and regulations, a legal framework that has rapidly become obsolete in the face of the devastating shockwave of multinational giants that alter consolidated balances with a system based on networks of interconnected entities placed on the same level. They operate according to horizontal and equal relations, affect operational mechanisms that until now were based on an hierarchical and a vertical approach, and are organised by rigidly compartmentalised levels and structures.

This is a dynamic that we could define as physiological in certain aspects, which concerns the normal interaction between market operators, at least until the moment when it takes on pathological connotations, i.e. when a platform transforms and consolidates its primacy through expansion in contiguous sectors ³⁵, the acquisition of competitors or their exclusion from the market ³⁶. This ecosystem, in which is inherent the aspiration to a greater individual freedom, developed apparently spontaneously, has subverted traditional organisational modalities and forms through a process of disintermediation through algorithms and artificial intelligence, which regulate the relations

³⁵ So-called platform development

³⁶ With strategies similar to those that, for example, gave rise to the monopolies in the United States by J. P. Morgan and J. D. Rockefeller at the beginning of the 20th century

that exist on digital platforms and draw mostly from Big Data in the possession of public and private subjects.

In essence, the emergence of the new economy based on digital platforms, algorithms and artificial intelligence in areas such as transport, short-term real estate leases, parking, delivery and financial services, online training, has made the current system inadequate, highlighting a number of legal inconsistencies within regulated sectors and undermining the traditional socio-economic paradigm. This new economic structure, endowed with flexibility, autonomy, decentralisation, due to a singular asymmetry, corresponds to rules quickly rendered obsolete by the devastating shock wave of a technological evolution that has also made the boundaries between public and private uncertain. The constitutive elements of state sovereignty itself are challenged by big players who have no territorial borders and extend their range of action also to activities such as security and justice, previously entrusted to the exclusive care of public authorities and subjects.

In other words, the awareness is spreading that there is a need for a new, rediscovered role for the State and politics to protect its fundamental and strategic interests and to safeguard the collective well-being, which involves the rebalancing of increasingly pervasive and self-referential private powers. Hence the reflection underway at international level. Significant in this regard, for example, is the recent regulatory proposal of the German media regulator (Rundfunkkommission), which provides for stringent non-discrimination and transparency obligations on social media platforms and their algorithms.

The most profound insight taken from this chapter is how education, as traditionally part of the public sector that is uniquely entrusted with democratic public values, is rapidly inflected by the techno-commercial architecture of corporate platforms. As we have already seen, there are notable attempts by governments, nonprofits, and civic groups to design a constellation of “open” platforms, aimed at helping teachers, students and researchers who work with data and digital tools. However, making data and knowledge “open” as we have argued is not a warranty to keep education “public”. Many projects for open educational resources focus on the quantity and quality of data sets collected. What is needed besides affordable, manageable, and easily maintainable resources is a better and deeper understanding of how data flows reflect, construct and enact public values. The same open data sets can be used toward different goals. For instance, students performance track records, depending on their use, may lead to better personalised attention by teachers but may also enhance discrimination or

limit accessibility. A proactive engagement with potential short-term and long-term effects of datafication and personalisation should be accompanied by the drive to ask fundamental normative questions, not just about privacy, data security and surveillance but also about pedagogical foundations, the intrusiveness of techno-managerial surveillance systems, and the nature of quality education. Only if these wider societal norms and values are made transparent can we weigh and judge their implementation into platforms to which we trust the students' education ³⁷.

³⁷ José van Dijck, 2018

Chapter 3 : Artificial Intelligence

3.1 - GAFAM: the big5 technology - their role in the world

Artificial intelligence, the points on the table for the European strategy:

Legal framework and strategies for the development of an AI anthropocentric ecosystem.

These are the topics of the public consultation launched by the EU Commission with the participation of global stakeholders. From big tech to non-profit, here are the hottest issues and the political-economic oppositions in the field.

Technology at the service of people, a fair and competitive digital economy; support for an open, democratic and sustainable society. It is on these three cornerstones that Europe has long been confronted to launch a strategy on Artificial Intelligence. We can get a clearer idea by looking at the positions that emerged during the public consultation on the strategy and published in recent days.

Digital Future and White Paper

The consultation started on 19 February 2020, when the European Commission published its White Paper on Artificial Intelligence: A European approach to excellence and trust ³⁸. This was a strong call to echo the Commission's bold and ambitious vision of advancing and regulating AI and translating it into a design as challenging as the high goal it aims to achieve. The plan as a whole, known as Shaping Europe's digital future, includes the White Paper. And indeed this constitutes its main strategic leverage, deeply affecting the delicate relationship between artificial intelligence and its social impact.

Three promises are the highlights:

- 1- Fostering the development of technologies at the service of people.
- 2- Promoting the development of a fair and competitive digital economy.
- 3- Ensuring support for an open, democratic and sustainable society

Shaping Europe's digital future within an ecosystem that is both excellent and trustworthy, thus enabling the promised benefits of the "artificial", for European economic growth, social development,

³⁸ (together with a report on the safety and liability implications of artificial intelligence, robotics and the internet of things)

human wellbeing and improved security, to be realised, represent, in the complex European agenda, the crucial elements of the challenge to be faced and also the irreplaceable opportunity to be seized. However, there are still many questions that remain unanswered. Many people welcomed the Commission's invitation, partly due to the strong concerns that have arisen among companies developing or implementing artificial intelligence solutions, fuelled by serious doubts about how much and how the new rules announced on AI could have a negative impact on their freedom of enterprise and innovation, especially in the face of competition from formidable competitors in the United States, China and beyond.

Just at the very same time, in America, the ecosystem of trust linked to technological applications, undergoes a first significant jolt: Microsoft, IBM and Amazon make known their intentions to deny, for a more or less determined period of time, the use of their facial recognition systems by US law enforcement agencies, while waiting for the necessary regulatory adjustments imposed by the peculiarities and implications of the related applications. And, in Europe, the European Data Protection Supervisor adopts Opinion 3/2020 dated 16 June 2020 on the European Data Strategy. The debate is therefore open at global level and in full swing.

3.1.1 - The facial recognition issue

"High-risk artificial intelligence systems, such as facial recognition, should be transparent, traceable and ensure human control in sensitive areas such as "health, police and transport". The EU Commission adds: "These systems can involve risks, so it is essential to build trust with 'clear rules' for 'high-risk' applications that will have to be 'compliant with European standards'. Facial recognition is among the high-risk artificial intelligence systems, "its use is generally prohibited" and allowed "only in exceptional, duly justified and proportionate cases, subject to safeguards and based on EU or national law". The EU executive intends to launch a broad debate on which possible circumstances could justify such exceptions". The White Paper on IA is one of the two pillars which, together with the creation of a single data market, serve as the backbone of the EU's digital strategy for 2020-2025. Expectations are high and the consultation has shown this to be very interesting and participatory.

The results of the consultation

Companies including Facebook, Microsoft, Google, government, IA developers and suppliers, universities, citizens and other organisations have taken the opportunity to express their views on the important issues raised in the White Paper on Artificial Intelligence. Hereafter we review some of the most representative ones, outlining the central aspects of the single answers, trying to cover the whole spectrum of the actors involved, some more oriented to the promotion and to the greater definition of the practical and technical aspects, and others strongly aligned in favour of the ecosystem of trust and reliability in order to guarantee the respect of human rights, considered as a priority compared to the needs of competitiveness of the economic fabric.

Facebook: more certainties are needed

The Commission's invitation to the most famous social network in the world, which, not surprisingly, declares itself extremely eager to collaborate on the future of IA governance, as it can already contribute with its division dedicated to research and development called "Facebook AI Research (FAIR)". After a "warm" premise on Facebook's commitment to IA and ethical and sustainable development (to be read and interpreted with a good dose of critical analysis), the contribution focuses on two well-selected recommendations:

- The first: the Commission should provide a clear definition of the concept of "high risk artificial intelligence". The question of what can be defined as high-risk AI, for Facebook, needs to be answered with certainty and a clear outline. In practice, a reminder that the institutions should abandon vague and smoky attitudes and instead be precise in the definition of 'AI' and in identifying which sectors and sub-sectors can be considered high risk, as a pre-condition for the application of stricter and more stringent regulations.
- The second: It recommends to maintain the necessary regulatory alignment between GDPR and the constituent IA regulatory frameworks. This "to provide greater legal clarity, avoid duplication of regulation and ensure a proportionate approach to these new problems". In particular on preventive and mandatory impact assessments for high risk systems.

It continues then with a number of further specific questions relating to the aspects outlined in the White Paper and their compatibility with other legal obligations which, in addition to data protection, involve intellectual property. There are also practical concerns, which sound rather cryptic: in addition to the lack of coordination between regulations that affect and overlap on the same areas, there are also difficulties for developers related to the applicability of the new rules with regard to systems already in production, the increased costs of compliance for companies. "There are many difficult questions ahead of us and we look forward to working together to answer them, both in the context of this legislative dialogue and in other forums" concludes the contribution.

3.1.2 - Point of view on big companies

Access Now: Raising the guard on risks

The non-profit organisation dedicated to the creation and protection of human rights in the digital age, active in 13 countries around the world, including Europe, contributed to the public consultation by suggesting six key recommendations. All are inspired by respect for existing values enshrined in the Treaties and the EU Charter of Fundamental Rights and aimed at promoting a regulatory approach to AI based on human rights before risk.

- Not promoting the indiscriminate spread of artificial intelligence
- Implementing a rights-based approach and mandatory human rights impact assessments in both the public and private sectors
- Banning technological applications that are incompatible with fundamental rights, such as those that base their algorithmic predictions on the use of biometrics and that lend themselves to forms of mass surveillance
- Establish national AI skill centres to promote better understanding by institutions and regulators
- Establish, in the public sector and in some cases also private sector, specific public registers for AI/ADM- automated decision-making systems, with a view to transparency and reliability and a clear definition of responsibilities.
- Apply high scientific standards in the verification of solutions and validation of the processes in which AI solutions fit.

"The White Paper does not consider two key points: first, that not all cases of AI implementation are compatible with fundamental rights; second, that artificial intelligence-based systems are not always the best solution for a given problem. Indeed, while artificial intelligence systems certainly have the potential to increase efficiency and improve aspects of our lives, their benefits must be assessed on a case-by-case basis and supported by evidence. If and when AI proves to be compatible with our rights and freedoms by highlighting the benefits of so much, only then should it be promoted and allowed. When the opposite is true, and there is a threat to our rights and freedoms or a lack of evidence of real benefits, the EU should actively oppose its dissemination," says the relevant document.

Microsoft: relying on existing legislation

Five suggestions from the company created by Bill Gates and Paul Allen.

- 1) Encourage the adoption of governance standards and procedures to make reliable IA operational.
Encourage transparency procedures on the limits and risks inherent in the use of any AI system: preferably on a voluntary basis but also binding if necessary, at least for high-risk use cases.
- 2) Promote positive uses of AI by removing them from the contamination of the most abused market logics and at the expense of safety and reliability.
- 3) Make a proper differentiation between the different types of damage potentially related to safety and fundamental rights risks, with different rules and compliance regimes.
- 4) Clarify which requirements apply to which actors (e.g. developers, implementers or other end-users) and define a clear liability framework.
- 5) Rely as far as possible on existing regulatory frameworks without neglecting the right adaptation or integration where necessary.

"Microsoft is committed to helping the EU make IA work for all Europeans, working with the public sector, academia, civil society and industry. Promoting confidence in AI is a continuous process, but it is essential to encourage its wider adoption. In some cases, this may require new laws or new interpretations of existing laws. The challenge is to balance the mitigation of potential harm with the promotion of the vast positive potential of AI. We welcome the opportunity to work with the Commission and other stakeholders to make IA reliable and responsible across Europe and beyond".

Google: don't harness innovation

Google also welcomed the publication of the European Commission's White Paper on IA. "We also support the Commission's objective to build a framework for innovation in AI that will create confidence and guide the ethical development and use of this widely applicable technology. We appreciate the Commission's proportionate and risk-based approach," said Kent Walker SVP, Global Affairs at Google. However, the replies to the Commission's proposed questionnaire from the technology giant have made clear the company's criticism, administered by Sundar Pichai, of the European plan designed for IA. The definition of high-risk AI applications remains a particularly sensitive point and Google suggests a clear delimitation. It goes so far as to suggest the complete elimination of the "exceptional cases" clause referring to high-risk artificial intelligence systems,

whose use would be generally prohibited and admitted "only in exceptional cases duly justified and proportionate, subject to guarantees and based on Union or national law". The wording is considered too open and therefore complicating. Similarly, it seems desirable to clarify the scope of the concept of 'immaterial damage'. Google is also concerned about the training data requirements, which could, according to the company, hinder the development of AI in a rapid and effective way, especially in emergency contexts such as the current COVID-19 pandemic.

Other worries relate to the unfamiliarity of the Commission and regulators in general with particularly complex technical requirements and, to this end, calls on the institutions to work closely with professionals to clarify crucial issues that can ensure consistency between what is proposed and what may be technically feasible and appropriate to achieve the Commission's objectives. Equally, the provision for further regulatory frameworks should be subject to a careful analysis of existing frameworks by experienced lawyers in order to avoid unnecessary duplication of legislation and various incompatibilities. The drafting of a real guide to be followed for the "due diligence" of high risk AI applications is also considered as a proper integration to existing or upcoming regulatory provisions and functional to the accountability of companies.

"Artificial intelligence technologies will enable us to make rapid progress in terms of safety and productivity throughout society and the economy. Accordingly, any regulatory framework governing their use will need to be flexible, not rigid or over-prescriptive in nature, ensuring that they can accompany rather than discourage future innovation. It will be a challenge for regulators to develop a sufficiently flexible framework to account for this inevitable change without being so vague". The White Paper "suggests mandatory legal requirements, some of which, according to Google, could significantly hamper the development and deployment of AI-Applications", the document also recalls the ethical principles on AI as of 2018.

ITI: global standards are needed

Along the same lines as Google also ITI, the Washington-based trade association representing the best companies in the information and communications technology sector. The response to the public consultation highlights in particular the need to promote a commitment that, while starting from Europe, extends beyond the borders of the single market to the development of global, voluntary and industry-oriented standards in order to support the proper dissemination of AI for the benefit of all

countries in the world. "We support the White Paper in its suggestion to further involve stakeholders in the sector in an open and inclusive way in the creation of the European AI approach, including any regulation". As the AI ecosystem is global and technology is no longer developed in regional silos, the effective means to advance the European AI agenda are those that allow the discussion to expand beyond the national dimension. We recommend that the EU engage beyond the borders of the single market, to foster the development and use of AI globally by working with its international partners to promote respect for fundamental rights, non-discrimination and the protection of privacy" concludes the international organisation's response.

ETNO: less constraints, more focus on acceleration

The European Association of European Telecommunication Network Operators has also had its say and the feedback is particularly critical. After a premise on the expected benefits of 5G and IoT, ETNO "wanted to warn" the Commission as it was too focused on regulatory aspects of AI reliability to the detriment of the necessary "bold but workable stances" that can foster ecosystem excellence throughout the entire value chain. It also regrets the lack of detail on actions that should enable the deployment and scalability of AI technology and products across Europe, thereby ensuring the EU's fair competitiveness on the global scene. To this end, it also calls for a more accurate definition of "artificial intelligence system", perhaps based on the description in the HLEG guidelines, as a prerequisite for a proper assessment of the problem and a clear definition of responsibilities for artificial applications "in line with the polluter pays principle". So ETNO, that goes on: "The overall objective of the European AI strategy should be to pursue a coordinated approach, strengthening the Union's ability to keep pace and remain competitive with other regions of the world in the development and distribution of AI applications. Divergent national requirements that raise barriers to the development and deployment of AI technology in the single market should be avoided".

Center for Data Innovation: onerous rules

Interesting as well as provocative is the response of the research group considered to be one of the main think tanks in the technological field, which has strongly criticised the intentions expressed by the Commission, even defining them as contradictory between them: "The White Paper states that the EU should avoid overly prescriptive rules for AI, encourage its use to strengthen the EU's competitiveness and commit to allow scientific discoveries and innovation, but continues to propose

measures that would slow down innovation and the adoption of AI in the European Union". Measures that do not fail to label as "burdensome and counterproductive". Rather than the precautionary principle, the EU should focus its efforts on the principle of innovation and "ensure legal certainty and limit the costs of using AI; give priority to dialogue with industry; and involve EU partners and democratic allies in its process". A vision also shared by the Computer and Communications Industry Association, which fears the spread of "long bureaucratic approval processes", the response of AI Now Institute, City of Amsterdam, City of Helsinki, Mozilla Foundation and Nesta. The group, supported by the open source software company Mozilla, submitted a letter to the Commission highlighting concerns about the procurement of certain artificial intelligence applications and transparency issues related to the use of certain technologies in public administrations.

Academic researchers: putting the man at the centre

Among the academic researchers on artificial intelligence is the feedback from representatives of the Polytechnic University of Valencia, the University of Copenhagen, the University of Cambridge and the Leverhulme Center for the Future of Intelligence - a leading international centre for AI ethics. Their exhortations highlight in particular the interest in the issues affecting the ecosystem of trust promised in the White Paper, and hope for their swift and decisive introduction. They call for the rapid introduction of a regulatory framework inspired by the protection of human values as a key element in demonstrating European leadership at global level and a necessary precondition for reconciliation between respect for citizens' rights and business competitiveness.

Netherlands: moving forward with the Single Market

Last but not least, the replication of the Netherlands all focused on synergistic interconnections to be interpreted in terms of value between the two ecosystems underlying the European IA strategy. All within the framework of European principles and standards, favouring cooperation between Member States and combating fragmentation, including regulatory fragmentation, at national level. "The ecosystem of excellence creates the conditions for a growing single market with economic opportunities and prosperity for the benefit of all citizens and businesses. The ecosystem of trust creates the parameters within which the Single Market can also grow in ways that include IA applications".

All the uncertainties left in the field

What happens now? How will the Commission "build on" the suggestions from the many sides of civil society and other stakeholders? Ursula von der Leyen quoted the historian Yuval Noah Harari at a past press conference in Brussels: "People have always been better at inventing new tools than at dealing wisely with them. And in fact, there are many different critical issues to deal with. And the unanswered questions remain. From those related to the autonomy that characterises the decisions of artificial intelligence to the problems in terms of responsibility.

From the rigidity of existing regulatory frameworks to instances of openness and innovation. From the lack of transparency in algorithm decisions to the lack of concrete strategies on digital governance. From the ethical approaches required in the regulation of "artificial" applications to the lack of an environment of trust and clear definition of responsibility. And again, from the issues related to the so-called digital divide, the gap that is created between those who have access to information technologies and those who are excluded, to the instances of coordination of digitisation inherent in the management of global problems, from climate change to antimicrobial resistance. Beyond any dystopian vision, building an artificial intelligence in an ethical way and having an ethical artificial intelligence is proving to be a challenge as complex as it is necessary. An urgent and critical assessment of the opportunities, risks and governance needs associated with artificial intelligence and data use is imperative and cannot be postponed.

Can we therefore do more, better and faster? Defining priorities, ordering actions into strategic mandates, setting objectives and financial resources, especially human resources, selecting the best minds, will be the first signs that could guide the responses still awaited.

3.2 - The evolution of drones

Amazon is ready to deliver from the sky with the new drone: "Parcels delivered in half an hour". Jeff Bezos' giant presents the latest prototype of the Prime Air program: an aircraft that moves like a helicopter and can carry packages weighing up to 2.5 kg. The future is getting closer and closer. At least for Amazon, which is increasingly relying on artificial intelligence and robots to deliver its products, and which has confirmed that it is ready to test the first drones capable of bringing them to their destination within 30 minutes. Jeff Bezos' giant had announced that it would be working on drone deliveries as early as 2013, but in recent days, on stage at the annual Re:Mars (Machine learning, automation, robotics and space) conference in Las Vegas, he unveiled the latest prototype of the "Prime Air" project: a drone capable of taking off and landing vertically like a helicopter and delivering heavy packages of up to 2.5 kg within a radius of about 15 kilometres taking about half an hour. Capacities that would allow Amazon to dispose of between 75 and 90% of the parcels by air, increasingly meeting the needs of customers who want to receive the ordered goods in the shortest time and with the lowest possible energy expenditure. "We know that customers will only feel comfortable receiving drone deliveries if the system is absolutely safe," said Jeff Wilke, CEO of Amazon, from the Las Vegas stage, listing the features with which he hopes to gain approval from the Federal Aviation Administration (Faa), the U.S. air traffic regulatory body, to the Prime Air program.



Amazon Prime air

The drone is in fact equipped with thermal and depth cameras and sonar to detect and avoid potential dangers, and the on-board computers do the rest, based on an automatic learning system that helps the aircraft to get around obstacles, whether they are electric cables, other flying objects or "a dog in the backyard", as Wilke pointed out. The rotors are completely covered, and the six propellers and tilting design allow it to fly forward as well as take off and land: the packages to be carried are

stored in the fuselage located in the centre, easily accessible by the customer. From robots to self-guided pods, the deliveries of the future are autonomous and hi-tech. The e-commerce giant unveiled the drone with a video that anticipated some of the aircraft's capabilities, but to date little or nothing is known about when the Prime Air service will begin to deliver, where and for what type of customers: "You'll see it deliver packages to customers within a few months," Wilke assured, without giving further details.



Amazon Scout

Certainly it is that to date the head to head for the "control of the skies", at least from the point of view of deliveries, is between Amazon and Google, which recently unveiled "Project Wing", a delivery service with drones already being tested in Finland and Australia. However, other competitors have already appeared on the square: Ups has tested the delivery with drones in Tampa, Florida, using a model that can fly up to 30 minutes with a heavy parcel weighing a maximum of 4.5 kilos, and several other companies specialised in logistics have focused on robots for last mile deliveries.

In addition to Amazon itself, which has already started experimenting with Scouts for home deliveries in the district of Washington, there are also FedEx and its SameDay Bot, able to orient itself in the "urban jungle" avoiding obstacles and going up and down the sidewalks, as well as Ford and its Digit, an android that interfaces with vans and walks on two legs and can carry a maximum weight of 18 kg directly in front of the door.



Ford Digit

In Arizona, on the other hand, the experimentation of Nuro, a company specialising in robotics that has entered into a partnership with Kroger supermarkets to deliver groceries through fully automated pods, is enjoying success.



Nuro

3.3 - Telemedicine: health apps as part of the platform ecosystem

How Artificial Intelligence can help us in the battle against Coronavirus

Diagnostics by images, cross-referencing epidemiological data and algorithms to speed up intervention times, at Humanitas a series of projects are underway to exploit new technologies against the pandemic by Prof. Arturo Chiti, Head of Humanitas Nuclear Medicine and lecturer at Humanitas University. Recognising an early stage interstitial pneumonia from a CT scan or chest X-ray; cross-referencing the information contained in the medical records with epidemiological data, evaluating the possible course of the disease and the risk for the patient and identifying the best solution for therapy. This is the work that hundreds of specialists do excellently every day in Italian hospitals.

But what happens in a pandemic situation, when the number of patients becomes very high, the amount of data enormous and resources more limited? What tools do new technologies offer doctors? Today there is a lot of talk about artificial intelligence and the help it could provide in medicine, exploiting an enormous amount of data. A contribution that could prove decisive especially in emergency situations such as that caused by the global spread of the Sars-CoV-2 virus, providing a formidable tool for knowledge transfer, potentially available to all doctors, from large hospitals to small provincial principals.

The applications of AI have been spreading in clinical practice for some years now. One of the areas in which there is more attention is that of diagnostic imaging. Some products are already available in this field - and many others are under development - that help professionals such as radiologists and nuclear physicians to evaluate the images that are submitted to them. There are systems that help to identify lesions or recognise alterations - in oncology or neurology for example - and more sophisticated ones that also try to give meaning to alterations. Still others allow to optimise the method or to optimise the flow of diagnostics. The applications are therefore multiple and we can say with certainty that they will have a development in the coming years in the direction of an increasing level of automation.

What contribution can Artificial Intelligence make against Covid-19 disease? Applications are already available to recognise interstitial pneumonia, which is the typical picture of patients infected with Sars-CoV-2. Commercial software has been developed in China, others can be borrowed for free or have been made available online. We are talking about very elaborate machines, trained to recognise

structures and alterations, such as pneumonia in a chest x-ray. How do they learn? Like people, through training. Experienced radiologists indicate the characteristics and the algorithm sees them, through the analysis of many thousands of images, learning to recognise them. It's demanding but valuable work: in the end the application will be able to do this work on its own. And if to do the training you need a great computing power, once finished the software can be used on any computer in the world.

The contribution of the software is all the more important the more complex the task of those who have to read the images. Let's think of the lesser or "borderline" cases, for example in the presence of pneumonia in the early stages or slight alterations, which are more difficult to detect. But this tool could be of great help especially in hospitals that have not yet seen many cases, where radiologists have had less opportunity to gain experience. Artificial intelligence algorithms transfer the knowledge of more experienced professionals into software, allowing everyone to make reliable diagnoses. In the current case, the impact can be high especially in those centres where the contagion has not yet arrived massively.

Does this mean that artificial intelligence, left alone, would be able to tell if a patient is Covid-19 positive? It's not that simple. It's not enough diagnostic imaging to recognise Sars-CoV-2 pneumonia from flu pneumonia. The radiological picture is very similar if not overlapping. However, there are some features that can make us lean towards one diagnosis rather than another. It is necessary to assess whether a pandemic is underway, as in this case. If the period of the flu peak has passed. If the patient has had contact with positive people. I mean, we don't have a definite diagnosis without considering the clinical and epidemiological context. And it is on this point that AI can play an important role, thanks to its ability to process data from different sources.

Can AI make predictions about the prognosis and understand the evolution of the disease? This is what it is intended to verify with a series of projects, some of which have already been put in the pipeline by Humanitas. As said, the prediction of the clinical course cannot be made only on the basis of images: it will also be necessary to cross-reference clinical and epidemiological data. Neural networks are extremely effective in making the classification. A software can evaluate the patient's CT, blood tests, oxygenation, age, origin, possible co-morbidity and then put him in a risk class. This could help to understand, for example, whether a patient needs to be admitted or can be treated at home.

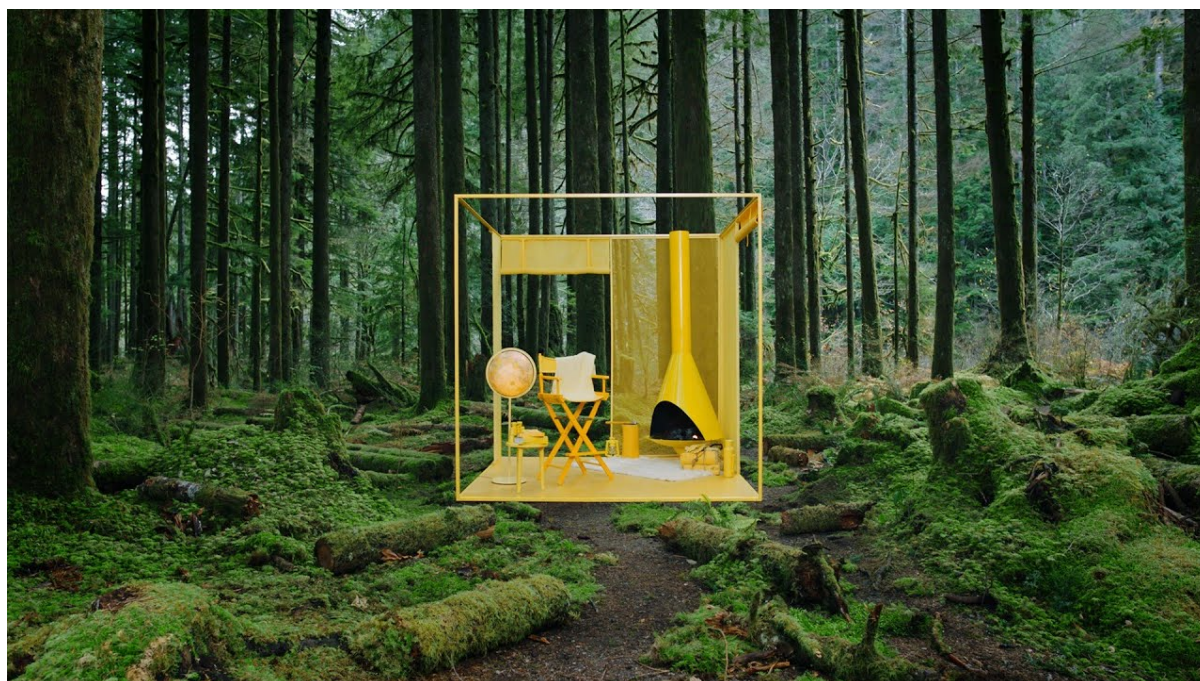
The other development, thinking also of the initial difficulties of doctors in recognising the new disease as the epidemic moved across countries and continents, is related to the possibility of speeding up reaction times. If the first centre that detects an unknown alteration was able to immediately send an art, through an algorithm that recognises the new structure, after having undergone the necessary training through the study of a sufficiently large number of images, this could bring the information in real time even in distant or non-specialised hospitals. We would have in our hands an extremely valuable tool that could potentially save many lives.

3.4 - Technology to respect the environment

Artificial Intelligence at the service of the environment, the Microsoft project

Climate and environment at the heart of Microsoft's new project: data from all over the world will be analysed by Artificial Intelligence to protect the Earth. Microsoft presented its AI for the Planet project, which applies Artificial Intelligence to areas such as climate, biodiversity, agriculture and water resources to support organisations and people to address environmental challenges. Yesterday Microsoft presented the Planetary Computer, a platform that uses Artificial Intelligence to analyse data about the environment to protect it. President Brad Smith explained that the platform will aggregate environmental data from around the world into a "new planetary computer. We will combine this work with new work," he added, "to enable partners and customers to use the results to improve environmental decision-making in their organisational activities.

Climate and climate change will also be important within the project, where their impact on forests will be considered. Considering the fundamental role that forests and forests have for our future, Microsoft has developed tools to calculate and monitor their condition. In particular, explains the Redmond giant, Artificial Intelligence will help through the realisation of "high resolution maps that determine the ecological, social and economic health of forests, also providing indications to improve it. The machine learning capability will make it possible to predict the impact of climate change, fires, tornadoes and other relevant risks".



A planetary computer for earth

Conclusion

The discovery of Covid-19 in Europe, and in our country, has triggered a series of dynamics both at a territorial community level and at an institutional level that require in-depth reflection. Since December 31, 2019, when the Chinese authorities reported an outbreak of pneumonia from unknown causes in the city of Wuhan, and in particular since January 9, 2020, when a Chinese task force identified the new Covid-2019, there have been numerous reports of a new virus that had forced a mass quarantine in the Chinese province of Hubei. The absence of vaccine, the lack of a specific therapy with only symptomatic support forced the Chinese health authorities to isolate 56 million people in the outbreak province. The rapid transmission of a completely unknown infectious agent has forced a country with one of the world's largest exports to resort to drastic interventions that have contributed to both health and economic fears. As human beings we are often exposed to forms of communication that can fuel fear of what we do not know and if this "unknown" is of a health-related nature and therefore potentially damaging to our physical safety, fear can become uncontrolled anxiety.

In a health emergency it is necessary to know precisely what to say and how to say it because this situation touches a sphere of the individual citizen where the normal processes of cognitive reworking are not put in place. When danger is perceived at the level of one's own safety, we do not reason considering all possible options, but we tend to a simplified reasoning because it is more functional to our survival. If you are in the Savannah in front of a lion, you do not ask yourself whether the lion is satiated or not, but you quickly escape the danger, and in this health emergency the individual thought process has not been very different. In the face of danger, the Individual puts in place psychological strategies that do not take into account community protection precisely because his evolutionary behaviour leads him to a more regressed level. The perception of what makes us afraid suggests what to do to avoid running a certain danger. Initially, in this case, in order to escape the Covid-19 epidemic it seemed sufficient to avoid subjects of Chinese nationality or people coming from the outbreaks, increasing the sense of segregation imposed by health measures.

The onset of the first case in Italy found us already saturated by over a month of dystopian images from China, where the media showed hospitals built in ten days, mass disinfestations, isolated megalopolises. Leaving aside the communicative impact that had the initial accentuation of the sense of community protection, intended as a response to an adverse event on the part of a nation-state and its reaction with respect to those outside our country, it is beyond doubt, and widely shared by both

political forces and the media, that the dozens of statements, interviews, and television appearances have led to several errors in communication. A possible criticality was not that of having communicated, almost in real time, the expansion of the infected or the number of possible cases of infection, but of having done so without taking into account what psychological impact it could have had on the entire country.

The communication errors that occurred were among the most classic, i.e. not considering the discrepancy between issuer and receiver, where the issuer (understood both as politicians and scientists) at first emphasised the dangerousness of the situation, and then claimed that the new virus "is little more than a flu", with a not always exact coincidence in the judgement of the disease (even at the level of the scientific world) creating such a cautionary that it did not convince the listener and that, on the contrary, it created ambiguous messages, altering the channel of the message, trying to speak in percentage terms in an auditorium where not everyone is accustomed to understand its meaning, and moreover, showing a verbal communication not consistent with the non-verbal.

Among the various channels of information, a lot of data arrived through social networks in which messages pass quickly, turn numbers and hot impressions that are not the result of thoughtful reflection, often creating an information overload that tends to simplify the information for the final recipient who perceives it emotionally rather than analysing it rationally. Italian healthcare professionals and politicians have never said that our country would be exterminated by Covid-19, even stating that, since the first 1500 Chinese cases, 80% of the infected people would have developed mild symptoms and the remaining 20%, however, including the possible inauspicious results (a very limited percentage) would have needed specialised treatment in specialised settings.

What is clear is that the new needs have developed a greater openness and awareness towards digitisation. That sort of "mass social experiment", with few precedents in history, in which we have participated, has left us an important legacy: many have relied and are still relying on technology as a real lifeline. In addition to the direct impact on health and the economy, the Covid-19 is leading to a new and more articulated media diet. Suffice it to mention the impressive growth in home banking, social media and sharing platforms. Not to mention the explosion of new realities such as TikTok and the gaming world, which are now mass phenomena. Three out of four people are now more inclined to streaming and e-commerce than last year.

The need has led a wide audience to access, often for the first time, to digital, accelerating evolution and developing cultural changes that are destined to remain. It is precisely this cross-generational adoption that is the most interesting phenomenon of this unprecedented historical moment. What has made the communication of events and measures in Italy even more anxious was, on the one hand, the alarmism spread by the media, traditionally inclined to a certain "sensationalism" in spreading the news, and on the other hand, the swarming of conflicting opinions among virologists, politicians, positions taken against the work of the Government and against hospitals, conflicts between institutions, inconsistencies of procedures and prohibitions. This confusion, however, was not only an Italian reaction, because just in these days we see how it is manifesting itself also in other European countries at the same time as the diagnosis of new cases of infection in France and Germany (car show closing, museums closed for days, large public demonstrations cancelled, ministers talking about epidemics, questioning Schengen).

Each person instinctively pays more attention to messages about himself or his own group, leaving out or paying less attention to those concerning another social or ethnic group. Moreover, our actions and our way of thinking depend on the context in which the issue is presented and our behaviour tends not to follow the logical value of information, but the activation of our socio-emotional system. The individual, feeling personally threatened, has tried to obtain as many food supplies as possible at the supermarket; he has procured masks and, not considering them as a professional protection device, has overlooked the fact that they would be missing just where they were most needed, in hospitals, where health care workers are in the front line with the sick. The Single, in the desperate search for self-preservation, delimited by the cognitive bias of survival, did not think that if health care personnel fell ill, in a country that already lacks health professionals, they would not have those who could assist and treat them. Moreover, always for his own cognitive bias, and in prey to ancestral fears, the Individual does not realize that as for any protective device he needs to know how to use it and that therefore, perhaps, that protection he believes he has obtained has not served any purpose.

The reactions, in particular those of the first days of the emergency, make us reflect how many people have a scarce collective consciousness and are led to protect mainly their own family nucleus or at most their own community, perceiving as distant and alien concepts such as Region or Country-Nation, also because of the weakness of solid historical roots in the collective unconscious. From this point of view it seems understandable how the immediate stimulus-response has been more functional

than the stimulus-response-long term response. It is therefore possible to explain individualistic and irrational behaviour on the purchase of masks and raids at supermarkets. The communication of the epidemic has stressed the emergence of an invisible enemy capable of creating much more anxiety than the one who appears before and can be identified. The search for patient zero and the count of the infected has highlighted the unknown of the virus in every possible person and has made the Single a possible danger for every other Single, blowing up the common resilience that would be necessary to face far-reaching emergencies.

With these communicative contents, multiplied out of all proportion also by the resonance and by the presence of the virus theme in the media, the anxiety of the unknown has been amplified, which unlike the emotional reaction to a terrorist attack where it is possible to identify the attackers, get the special forces to intervene and therefore eliminate the problem, has induced in people a counter-productive sense of panic and impotence. In the health sector, there is the communication of the adverse event and to have a good outcome follows precise rules. Whoever communicates an inauspicious news concerning the health of the individual provides few clear news, never ambiguous or interpretable, does so with the staff who share its form and content. He does this by paying attention to the communication time, the recipient's ability to understand and the possible emotional reactions.

In practice, the pandemic has brought us straight into a new era, which we could call post-digital. We have learned, through work, training and management of long-distance relationships, that technology can give us countless benefits. From tomorrow, we will no longer be able to renounce them, on the contrary we will take them more and more for granted, our right, our extra "arm". With the new perspective, the difference between digital and will not be less and less relevant.

Proactive behaviour reduces the feeling of abandonment, loneliness, uncertainty and can also contain despair. The "you won't be alone" becomes the message it carries and helps to accept. Let us reflect then, keeping in mind this model of communication. Saying how everyone can work together to bring the ship into port during the storm could channel positive energy by cutting the background noise that no one wants to hear in the end.

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Riassunto dell'elaborato

La scoperta del Covid-19 in Europa, e quindi nel nostro paese, ha innescato una serie di dinamiche sia a livello di comunità territoriale che a livello istituzionale che richiedono una riflessione approfondita. Dal 31 dicembre 2019, quando le autorità cinesi hanno segnalato un'epidemia di polmonite da sconosciute cause nella città di Wuhan, e in particolare dal 9 gennaio 2020, quando una task force cinese ha identificato il nuovo Covid-2019, ci sono state numerose segnalazioni di un nuovo virus che aveva costretto alla quarantena di massa nella provincia cinese di Hubei. L'assenza di alcun vaccino, la mancanza di una specifica terapia con il solo supporto sintomatico ha costretto le autorità sanitarie cinesi a isolare 56 milioni di persone nella provincia del focolaio. La rapida trasmissione di un agente infettivo completamente sconosciuto ha costretto un paese con una delle maggiori esportazioni del mondo a ricorrere a drastici interventi che hanno contribuito sia alla salute che ai timori economici. Come esseri umani siamo spesso esposti a forme di comunicazione che possono alimentare la paura di ciò che non conosciamo e se questo "sconosciuto" è di natura sanitaria e quindi potenzialmente dannosa per la nostra sicurezza fisica, la paura può diventare un'ansia incontrollata.

In un'emergenza sanitaria è necessario sapere esattamente cosa dire e come dirlo perché questa situazione tocca la sfera del singolo cittadino in cui i normali processi cognitivi non mettono in atto la rielaborazione dell'accaduto. Quando il pericolo viene percepito a livello della propria sicurezza, non si ragiona considerando tutte le opzioni possibili, ma tendiamo a un ragionamento semplificato perché è più funzionale alla nostra sopravvivenza. Se ti trovi nella savana di fronte a un leone, non ti chiedi se il leone è sazio o meno, ma tendiamo a sfuggire rapidamente dal pericolo, e in questa emergenza sanitaria il processo di pensiero individuale non è stato molto diverso. Di fronte al pericolo, l'individuo utilizza strategie psicologiche che non tengono conto della protezione della propria comunità perché il suo comportamento evolutivo lo porta ad un livello più regredito. La percezione di ciò che ci trasmette paura suggerisce cosa fare per evitare di correre un certo pericolo.

Inizialmente, in questo caso, per fuggire dall'epidemia di Covid-19 è sembrato sufficiente evitare l'arrivo di soggetti di nazionalità cinese o di persone provenienti dai focolai, aumentando il senso di segregazione imposto dalle misure sanitarie. L'insorgenza del primo caso in Italia ci ha trovato già saturi da oltre un mese di distopiche immagini dalla Cina, dove i media hanno mostrato ospedali costruiti in dieci giorni, disinfestazioni di massa, megalopoli totalmente isolate. Tralasciando l'impatto comunicativo che ha avuto l'iniziale accentuazione del senso di protezione della comunità, intesa come

risposta ad un evento avverso da parte di uno Stato-nazione e la sua reazione nei confronti di coloro che si trovano al di fuori del nostro paese, è senza dubbio chiaro, e ampiamente condiviso da entrambe le forze politiche e i media, che le decine di dichiarazioni, interviste e apparizioni televisive hanno portato a diversi errori di comunicazione verso le persone. Una possibile criticità non era quella di avere comunicato, quasi in tempo reale, l'espansione dell'infezione o il numero di possibili casi dell'infezione, ma di averlo fatto senza tener conto dell'impatto psicologico che potrebbe avere avuto su tutto il paese.

Gli errori di comunicazione che si sono verificati sono stati tra i più classici, cioè non considerando la discrepanza tra l'emittente e il destinatario, dove l'emittente (inteso sia come politico che come scientifico) in un primo momento ha sottolineato la pericolosità della situazione, e poi ha sostenuto che il nuovo virus "è poco più che un'influenza", con una non sempre esatta coincidenza nel giudizio della malattia (anche a il livello del mondo scientifico) creando un tale ammonimento da non convincere l'ascoltatore e che, al contrario, ha creato messaggi ambigui, alterando il canale del messaggio, cercando di parlare in termini percentuali in un auditorium dove non tutti sono abituati a capire la sua voce, e per di più, mostrare una comunicazione verbale non coerente con il ruolo.

Tra i vari canali di informazione, molti dati sono arrivati attraverso i social network grazie ai quali i messaggi passano velocemente, trasformano i numeri e le impressioni a caldo che non sono il risultato di un'attenta riflessione, spesso creando un sovraccarico di informazioni che tende a semplificare l'informazione per il finale destinatario che lo percepisce emotivamente piuttosto che analizzarlo razionalmente. La sanità italiana, professionisti e politici non hanno mai detto che il nostro Paese sarebbe stato sterminato dal Covid-19, anche affermando che, dai primi 1500 casi cinesi, l'80% delle persone infette avrebbe sviluppato sintomi lievi e il restante 20%, tuttavia, compresi i possibili risultati infausti (un risultato percentualmente limitato) avrebbe avuto bisogno di un trattamento specializzato in ambienti specializzati. Ciò che è chiaro è che le nuove esigenze hanno sviluppato una maggiore apertura e consapevolezza verso la digitalizzazione. Quella sorta di "esperimento sociale di massa", con pochi precedenti nella storia, in cui abbiamo partecipato, ci ha lasciato un'eredità importante: molti si sono affidati e si affidano ancora alla tecnologia come una vera e propria ancora di salvezza. Oltre all'impatto diretto sulla salute e sull'economia, il Covid-19 sta portando ad un una nuova e più articolata dieta mediatica. Basti pensare all'impressionante crescita dell'home banking, social media e piattaforme di condivisione. Per non parlare dell'esplosione di nuove realtà come TikTok e il mondo del gaming, che sono ormai fenomeni di massa. Tre persone su quattro sono ora più

inclinati a streaming ed e-commerce rispetto solo all'anno scorso.

L'esigenza ha portato un vasto pubblico ad accedere, spesso per la prima volta, al digitale, accelerando l'evoluzione e lo sviluppo dei cambiamenti culturali che sono destinati invece a rimanere. È proprio questa croce l'adozione generazionale che è il fenomeno più interessante di questo inedito storico momento. Ciò che ha reso ancora più ansiosa la comunicazione di eventi e misure in Italia è stato, da un lato, l'allarmismo diffuso dai media, tradizionalmente inclinati a un certo "sensazionalismo" nel diffondere la notizia, e d'altra parte, lo sciame di opinioni contrastanti tra i virologi, politici, posizioni prese contro il lavoro del governo e contro gli ospedali, conflitti tra istituzioni, incoerenze di procedure e divieti. Questa confusione, tuttavia, non è stata solo una reazione italiana, perché poi nelle settimane successive è stato possibile vedere che si è manifestato anche in altri Paesi europei in concomitanza con la diagnosi di nuovi casi di infezione in Francia e Germania (chiusura del salone dell'auto, musei chiusi per giorni, grandi manifestazioni pubbliche annullate, ministri che parlano sulle epidemie mettendo anche in discussione Schengen).

Ogni persona istintivamente presta più attenzione ai messaggi su se stessa o sul proprio gruppo, tralasciando o prestando meno attenzione a quelli che riguardano un altro gruppo sociale o etnico. Inoltre, le nostre azioni e il nostro modo di pensare dipendono dal contesto in cui la questione viene presentata e il nostro comportamento tende a non seguire il valore logico dell'informazione, ma l'attivazione del nostro sistema socio-economico e del sistema emotivo. L'individuo infatti, sentendosi personalmente minacciato, ha cercato di ottenere dal supermercato tutto ciò di cui ha bisogno per sopravvivere in questo periodo più unico che raro; si è procurato delle mascherine e, non considerandole come un dispositivo di protezione professionale, ha trascurato il fatto che sarebbero mancate proprio dove erano più necessarie, negli ospedali, dove gli operatori sanitari sono in prima linea a contatto con i malati. Lo Stato, nella disperata ricerca di auto conservazione, delimitata dal pregiudizio cognitivo della sopravvivenza, non ha pensato che se il personale sanitario si dovesse ammalare, in un paese che già manca di professionisti della salute, non avrebbe avuto chi potesse assistere e curare le persone.

Le reazioni, in particolare quelle dei primi giorni dell'emergenza, ci fanno riflettere su quante persone hanno una scarsa coscienza collettiva e sono portate a proteggere principalmente il proprio nucleo familiare o al massimo la propria comunità, percependo come concetti lontani e alieni l'idea di Regione o Paese, Nazione, forse anche per la debolezza di solide radici storiche nell'inconscio

collettivo. Da questo punto di vista dell'utente sembra comprensibile come la risposta stimolo-immediata sia stata più funzionale che la risposta stimolo a lungo termine. È quindi possibile spiegare l'individualismo e il comportamento irrazionale sull'acquisto di maschere e incursioni nei supermercati. La comunicazione durante l'epidemia ha sottolineato l'emergere di un nemico invisibile in grado di creare molta più ansia di quello che appare prima e che può essere identificato. La ricerca del paziente zero e il contagio dell'infetto ha messo in evidenza l'incognita del virus in ogni possibile persona e ha reso il singolo un possibile pericolo per ogni altro singolo, facendo saltare la comune resilienza che sarebbe necessaria per affrontare emergenze di vasta portata come questa.

Con questi contenuti comunicativi, moltiplicati in modo sproporzionato anche per la risonanza datagli dalla presenza del tema del virus nei media, l'ansia dell'ignoto è stata amplificata, che a differenza della reazione emotiva ad un attacco terroristico in cui è possibile identificare gli aggressori, ottenere forze speciali per intervenire e quindi eliminare il problema, ha indotto nelle persone un contro-produttivo senso di panico e impotenza. Nel settore sanitario, c'è la comunicazione dell'evento avverso e per avere un buon risultato segue regole precise. Chiunque rischia di comunicare notizie infauste sulla salute dell'individuo fornendo notizie poco chiare, ambigue o interpretabili, può ricorrere ad un colloquio con il personale con cui condivide forma e contenuto. Lo fa prestando attenzione al tempo di comunicazione, alla capacità di comprensione del destinatario e alle possibili reazioni emotive.

Il comportamento proattivo riduce il senso di abbandono, la solitudine, l'incertezza, che possono anche sfociare nella disperazione. Il "non sarai mai solo" , "#andratuttobene", "#celafaremo", "#iorestoacasa", diventano il messaggio che punta ad aiutare e ad accettare la situazione ed andare avanti. Allora cerchiamo di riflettere, tenendo presente questo modello di comunicazione. Dicendo come tutti possono fare per lavorare insieme per portare la nave in porto durante la tempesta, cosa potrebbe incanalare energia positiva e ridurre lo scomodo rumore di fondo che nessuno vuole sentire alla fine.

In pratica, la pandemia ci ha portato direttamente in una nuova era, che potremmo chiamare post-pandemica-digitale. Abbiamo imparato, attraverso il lavoro, la formazione e la gestione delle relazioni a distanza, che la tecnologia può darci innumerevoli vantaggi e che da domani non potremo più rinunciarci, al contrario li daremo sempre più per scontati, come nostro diritto, il nostro "braccio" in più. Con la nuova prospettiva, la differenza tra digitale e non sarà sempre meno rilevante.