

Capture and reinvention of true and authentic information: between promises and threats, what are the future factors for political sovereignty, economic development and citizen engagement under the growing influence of digital technology?

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Introduction

Produce, process and interpret data in order to understand and control reality, to give it meaning and create value. These are the challenges of digitization on a global scale, regardless of the activity considered: communicating, producing, selling, ...

The digitization of our societies continues to accelerate. Digital transformation seems to be going faster and faster. Artificial intelligence has yet to deliver all of its "magic."

The rapidity of these technological "breakthroughs" constitutes a challenge for maintaining the major political, economic or social balances. The deployment of digital in all human activities was very early observed as the path to undecided and uncontrolled deregulation.

We have to admit that technological progress is disrupting our relationship with information and knowledge as quickly as spectacularly everywhere on the planet. By taking some height in terms of technological contingencies, this progress is accompanied by upheavals in society in the relationship to power, whether political or economic, or even to legitimacy, authority or even property either intellectual, scientific or artistic.

The analyzes developed in this article will be structured on the basis of this statement by Serge Moscovici, eminent researcher in social psychology and the history of science, to distinguish two main axes of investigation and reflection:

"I assert without reticence that mass psychology is, along with political economy, one of the two human sciences of which ideas have made history. I mean that they have marked, in a concrete way, the events of our time." (Moscovici, 1985, p.15).

In the first part, we will report on a socio-economic and then geopolitical level of the opportunities and threats that the Internet poses to state sovereignty, respect for laws and democracy.

In a second part, we will explore the issue of data authenticity and information security in the context of social networks, cybersecurity and fake-news.

In conclusion, a vision of the evolution of paradigms will be offered. Until the mid-1980s, our deterministic representations were based on linear trends, marked by oppositions between ideological blocs, 10 or even 30-year economic plans, societies with stable partitions. Then, we moved on to non-linear representations marked by a strong instability of the world around us, made partly intelligible by chaos theory. Finally, it is reasonable to wonder about the future development of a paradigm based on quantum representations.

1. Loss of state sovereignty: from market deregulation to circumvention of legal rules

Free movement, deconstruction of rules and markets: political economy put to the test of hyper-connected digital

It is the question of state sovereignty that is posed in a globalized environment that digitization inevitably seems to complete: an unbridled free flow of information, goods and people. In addition to the opening of European borders, there is the dematerialization and circumvention of regulations and national law. If the WTO's mission has always been to open up world markets and international competition, it set the framework for signing agreements between governments, according to delegations legitimizing ambassadors and ministers. One of its main roles is thus to administer a global system of trade rules. And yet, the internet giants, because they are dematerialized, aim to escape this framework.

Consumer society and entertainment society: virtuality

At the end of the 1960s, it was undoubtedly too early for Jean Baudrillard, author of "The Consumer Society" to be able to take the measure of information, as data, as an object of consumption. As a reminder, the world was then subject to a geopolitical partition in the form of blocks. The mass-mediums, today qualified as "mainstream", constituted a 4th power. And, thanks to the writer Guy Debord, we realized that we were immersed, in spite of ourselves, in a society of the spectacle.

However, these enlightened views on our societies are still somewhat topical today. In this post-industrial era, individualism is, according to many observers, exacerbated, with its corollaries of the loss of the sacred and the search for meaning. According to J. Baudrillard "Strictly speaking, men of wealth are no longer so surrounded, as they have always been, by other men than by OBJECTS. » (Baudrillard, 1970, p.17)

With the internet, we consume information, data on a massive scale, which has partly replaced the object in our desires.

This virtualized environment focused on abundance, the search for identity and the loss of meaning pierces holes in what, in the 1960s and the decade that followed, was still the subject of ideological debates materialized by political programs and economic laws. Individual property, national solidarity and income sharing animated exchanges between citizens.

Moreover, questions of citizenship and nationality had not yet taken the magnitude they have today. Likewise, many societal issues did not yet challenge the established order.

Challenging intellectual property law

In this environment therefore, "peer-to-peer" (anonymized exchanges of data between individual computers) has abolished the intellectual property of musical, cinematographic or entertaining works (video games). This is a transgression of unprecedented scale.

If we follow François Rachline, economist, "Taking it is the main form of force before the appearance of economic civilization" (Rachline, 1991, p. 187). Even more, "(...) the vertical economy of aggression and distribution, of taking, will be followed by a horizontal economy of selling, which we can call the economy, period. »(Rachline, 1991, p. 188).

Rachline shows that the loot, resulting from a stream capture, is under the control of a chief. This leader "must therefore ensure his prestige, and he only achieves this through lavishness" (Rachline, 1991, p.171). Let us dare to update the words of F. Rachline by applying them to the object of our analysis. The capture of data streams (streaming) is the responsibility of a few hackers who, in their "extravagance" (sic), redistribute musical or cinematographic works via networks of so-called distributed servers (personal computers).

The hacker is anonymous and owes his notoriety only under the guise of an avatar. It receives financial compensation only through on-line advertising or even a modest contribution, via paypal, from its beneficiaries.

In France, laws have been promulgated to fight against counterfeiting and concealment of digitized works. On June 21, 2004, the law for confidence in the digital economy (LCEN) was passed, then on June 12, 2009 and December 21, 2009, the Hadopi 1 and 2 laws respectively, which enabled the creation of the High Authority for the dissemination of works. and the protection of rights on the internet (Hadopi).

However, it is now accepted that these illegal streaming practices would not harm the sectors concerned (cinema, music). According to various studies (data from SACEM or AlloCiné), the economic activity of these sectors has even experienced significant growth.

Unicorns: challenge to competition law, labor law and tax law

Then came the emergence of start-ups that revolutionized markets hitherto regulated by strict regulations. We are talking about unicorns, these companies which, starting only recently, have reached a valuation of over \$ 1 billion in just a few years. The term was coined in 2013 by Ailen Lee, an American angel investor.

Their core business is C2C intermediation (from individual to individual) or even B2C (from professional to professional) via online platforms which do not themselves bear the responsibility for compliance with regulations. Uber brutally shook up the regulated taxi market and questioned respect for labor law. Airbnb has called into question the regulated competition for rental accommodation between individuals.

Other start-ups, such as blablacar for connecting individuals to make journeys by automobile, have been able to open their capital to large groups. In this case, at the end of 2018, SNCF acquired a stake in Blablacar after having sold its subsidiary Ouibus to it. Interesting case of a merger between two previously competing and now complementary business models.

The Uber and Airbnb cases, for example, have followed very different paths. Legal and tax disputes have accumulated to the point where it is the web that has made and undone the reputation of these companies. For example, the online media Slate has published several articles denouncing Uber's managerial and business practices and reporting a very unfavorable economic situation. As for Airbnb, it is a set of resounding tax adjustments, American and European, that were revealed at the end of 2020.

GAFAM (Google, Apple, Facebook, Amazon and Microsoft)

“The initial Internet project was the product of particular historical and economic conditions: those of the Trente Glorieuses. Originally, it was an object financed by public money for the sake of the general interest. » (Interview with Smyrniaios, 2017)

“It is important to remember that the network infrastructure has been financed by public money to the tune of billions of dollars. This goes against the rhetoric that only the market can innovate. Even Silicon Valley is the product of public investment, and venture capital, which has enabled and still enables the growth of start-ups, is also a creation of the US government. » (Interview with Smyrniaios, 2017)

In addition, Amazon and Ali-baba have developed their global activity by banking on the promise of a wide choice of products at prices negotiated advantageously for their consumers and on reduced delivery times. However, it is then the respect for corporate tax law that is questioned. The accusations of dominant positions have flourished in different countries.

Remise en cause de la souveraineté de la monnaie : avènement et aléas des crypto-monnaies

The currency is historically marked with the effigy of the political leader symbol of state sovereignty ("Give back to Caesar what belongs to Caesar"). This is what makes fiduciary money (fiducia, trust in Latin) legitimate (of what is founded in law, in justice, or in equity, according to Le petit Larousse) because it is placed under the authority of the Central Bank.

So, is a cryptocurrency reliable and legitimate? The very prefix of "crypto" ("hidden" in Greek) shows a fundamental opposition to fiat money whose power it represents is shown and claimed in the eyes of all. The circulation of currency was a sign of the expansion of the Roman Empire.

The very nature of cryptocurrencies is that transactions are encrypted for security and authentication purposes. The case of Bitcoin is emblematic although it is not the only existing cryptocurrency. The creation of this virtual currency is not an institutional decision based on a legitimate power recognized by citizens. The networking of anonymous servers is a so-called "distributed" system owned by all users without belonging to any of them. A bit like peer-to-peer. There are algorithms that fix the amount of cryptocurrency in circulation. The holder is anonymous.

By nature freed from state governance, the system of creation, transaction and holding of cryptocurrency is opaque. System that escapes the transparency rules contracted between states. A means that facilitates tax evasion and the purchase of illicit products and services (weapons, narcotics, counterfeits, prostitution, crime, etc.) on the dark net (Tor network for example).

Democracy put to the test of data

The 2016 US election saw the rise to power of Donald Trump. While the election campaign was the subject of particularly harsh complaints and criticism, the voting arrangements were also the subject of numerous challenges and even scandals. However, it was not the American electoral system that was in dispute.

The accusations of unfair voter influence and electoral fraud explicitly referred to the opacity of the mechanisms of digital devices: social networks on the one hand, electronic voting machines on the other. The 4th power, that of traditional media, gave way to that of social networks. The main scandal of this election concerns the acquisition of the data of 50 million Facebook users by Cambridge Analytica of the British communications group Strategic Communication Laboratories (SCL) specializing in data analysis. Cambridge Analytica is said to have used this profiling data to influence the voters' vote in favor of candidate Trump.

2. Data: reality and value

Fundamental considerations on the nature of the data

The reliability of the data and the authenticated and secure control of their access guarantees the integrity of the information and the relevance of the choices and strategic decisions by the bodies, physical or moral, which are legitimately responsible for it. Data is a measure of the observable world that reflects our perception of reality. In this, the choice of data is not neutral with regard to the use that we can make of it (processing and interpretation and the actions that will result from it (decision).

These considerations at first glance banal and obvious are nevertheless fundamental for those who want to exercise their critical mind so as not to be trapped by a somewhat too rapid acceptance of interpretations which would include, from their outset, epistemological biases. and cognitive.

Algorithms, cloud and teleworking: transfiguration of reality, dematerialization or even dehumanization?

Data transfigures reality. The simulation of phenomena by modeling is a more reliable substitute for the observation of facts and their evolution. Confidence in the models, themselves evolving, is the basis of the credit given to predictions. For example, in many countries, political decisions to manage the COVID-19 health crisis have been based on interpretation, by scientific committees, of quantitative epidemiological models. The power and sophistication of these algorithms is, in itself, a new phenomenon.

Beyond the contribution of the events of our recent history, we can see that the dematerialization movement widely engaged in many companies on the administrative and commercial level is accompanied by the dematerialization of digital data itself. The widespread use of cloud computing and data centers seems to both distance us and dispossess us of data.

We could consider that compliance with the rules of social distancing, against covid-19 and which have led to the development of teleworking, have contributed to the dematerialization of collaborative work and of the worker himself. Among the criticisms made of teleworking, it is common to read that there is a dehumanization of the "social animals" that we are, to use the expression dear to Montesquieu.

From expert systems to Big-data and artificial intelligence for the general public

The 70s saw the development of Expert Systems, until the end of the 90s. Decision support tools, expert systems were computerized logical systems applying functions of processing an organization's data with a view to simulate and automate the responses that a human expert would have developed. The majority of these expert systems were characterized by a formal and linear approach to processing.

It was in the 1990s that fuzzy logic, neural networks and genetic algorithms made it possible to envision more efficient decision support systems. Artificial intelligence then experienced great progress due to the variety of fields of application that opened up to it. Thus, fuzzy logic is commonly integrated in an industrial environment (command-control systems), in the operation and regulation of household appliances, in the regulation of road or air traffic, in

medicine (diagnostic aid) or insurance (risk management). Neural networks are usually designed to facilitate pattern recognition mechanisms among an infinite number of applications.

Expert systems have long been in the hands of computer specialists for the needs of decision-makers and managers. Their cost was very high and could only be integrated into a business model where the productivity gains they generated guaranteed profitability conducive to an investment decision.

The second half of the 2010s saw an acceleration in home computing with access by the general public to very high-performance processors and spectacular storage capacities (of the order of several Terabytes) for unprecedented costs. (less than € 1,000).

The challenge of skills development: from technical skills to cognitive skills

At this point in our thinking, it is important to take into account that the distribution in the market of highly sophisticated equipment at "cheap" prices does not explain everything. Thus, in parallel with this industrial take-off, software and applications have developed which were previously difficult to access, not only because of their low costs, but also because of the lack of technical skills required for their use.

Until the 1990s, mastering the use of a computer required some knowledge of the operating system language (DOS, UNIX, etc.). Currently, any user can be a simple consumer of these resources without knowing their technical operation. Cognitively, one could perhaps argue that one can also be a member of social networks without special knowledge of information theories, group dynamics or crowd psychology.

Conversely, today, many students master high-level artificial intelligence devices whose computing power is out of all proportion to what has come before in all of human history. The "R" programming software is open source, that is to say free and whose development is collaborative. It enables data analyzes and the design of high-performance predictive models in all fields of activity (economy, medicine, politics, meteorology, etc.). Access to Big data and to "open" data becomes profitable for those with the necessary equipment and skills.

It appears a partition of the world population into social groups according to the degrees of mastery on the one hand of technologies for processing and production of information and on the other hand of understanding of the psycho-sociological springs of communication. A first partition appeared at the end of the 1970s with the marketing of the first personal computers and the first programming languages.

Cybersecurity: intrusion, theft and disclosure of information

With dematerialization, entire sections of our lives become dependent on certain data that we qualify as sensitive including health (individual medical file, health pass, etc.), personal finance management (online accounts, etc.) , etc ... This observation can easily be generalized to all the data managed by companies and administrations,

Strategic data, which is therefore sensitive, is the object of greed by third-party states, competing companies, hacktivist organizations, whistleblowers, etc.

In many high profile global media cases, it is unauthorized revelations, leaks, that have allowed the disclosure of very large amounts of information hitherto secretly stored in data lakes.

We remember the cases:

- Wikileaks in 2010 regarding the disclosure of information related to US military operations in the Iraq war.
- Snowden in 2013 with the release of metadata from a mass telephone surveillance of US and UK citizens.
- Swissleaks in 2015 or the publication of the names of individuals or companies that would have benefited from an international tax fraud scheme.

In other cases, it involves theft of data for private purposes as it is not made public. These thefts are committed by individuals, for-profit organizations and even states. On many occasions, the international press has echoed suspicions of Russian or Chinese hackers in actions against Western companies or organizations, and even in elections.

On the other hand, identifying the tactics employed in the context of digital scams would be tedious as the imagination of the evil-doers seems so creative. We will stress the importance of ransom operations consisting in blocking out a computer system in order to offer its unblocking for a ransom.

Cyber security comes at a very high cost. In early 2021, the French head of state, Emmanuel Macron, announced a plan to strengthen business cybersecurity for a budget of 1 billion euros by 2025.

Social engineering: the human factor, a major weakness in systems

The human factor, when it comes to cybercrime, is not limited to leaks. Many people, individuals, employees, executives or company directors have, without their knowledge, handed over the keys to access data to malicious individuals.

Social engineering or human relations games conceals many communication techniques to deceive vigilance, distract attention, gain the trust of others in order to extract vital information, such as usernames and passwords, to penetrate a system. of information.

Generally, these techniques only become effective thanks to the poor knowledge of the victims in terms of protecting this vital information. Sometimes, the photocopier room or the recycle bin in an office are treasure caves for those whose sport theft is a favorite sport and a lucrative business. From time immemorial, naivety and candor have constituted the privileged

ground of the crooks of all kinds to exercise their deception and carry out their misdeeds. Digital technology is no exception to this law of human interactions.

A little further on, we will come back to the contributions and the determining role of social psychology in the underlying mechanisms at work in these villainous activities. Indeed, the repeated awareness of all actors in the organization, through audits and training sessions, is, in the opinion of cybersecurity experts, the first shield against digital intrusions.

At this stage of our reflections, we can realize to what extent Serge Moscovici certainly got it right in considering political economy and social psychology as the determinants of the facts of history.

Social networks: power, desire and enjoyment to be what you want

Social networks are first and foremost the "places" for rapid, if not immediate, consumption. Twitter won the game against Facebook: shorter, more impactful. Temple of virality, Twitter is the place of media existence for any journalistic, political and economic actor, but also artistic or sportsman. Notoriety is cultivated there. Reputation is working on it. It is a virtual agora.

These new consumer practices are forcing advertising networks and internet influencers to produce (very) short videos. 30 seconds of video retains 85% of the audience. 2 minutes of video respecting the usual codes in terms of narrative and rhythm can still allow us to expect the attention of 50% of the audience.

Being an influencer: the myth of the hero

On these platforms, influencers are glorified. Anonymous who through their perseverance and talents have developed a growing audience, by virality, to the point of making it a lucrative activity. There is something for everyone. Many communication agencies have influencers among their service providers who set the tone and pace for the messages and clips of some of their clients.

Vocabulary undoubtedly tells us a lot about the construction of thought. If the virus is a danger that we are fighting, to preserve our biological health (covid-19 ...) or our digital health (ransomware ...), digital virality is a desired, sought-after phenomenon, a sign of digital growth. Reversal of meaning.

The phenomenon has become commonplace. Even President Macron who took part in a friendly video with McFly and Carlito (himself the son of Guy Carlier, lyricist and columnist), two famous internet comedians.

The influencer exists in relation to his community, an anonymous and intangible crowd. With younger, more intellectually permeable audiences, the phenomenon of influence pushes through to identification. The influencer becomes a modern hero. The crowd, as in the gladiatorial arena, may like (thumbs up) or hate (thumbs down). It's an instant vote.

Conversely, the virtual crowd sometimes engages in violent hatred. Communities form a coalition to denounce who has published messages contrary to their vocation. The Mila case in France is emblematic. The case has been taken to court as the hate messages and death threats have grown enormously.

What governance for social networks?

These social networks are all driven by the emotional load that members assign to the messages disseminated there. The speed and extent of this diffusion are as much the causes as the consequences of this emotional charge.

Crowd psychology has shown that the phenomenon of mass, by imitation, often removes the individual from his own responsibility. The acceptance of unauthenticated, deceptive or only aberrant and unverifiable messages is the driving force behind fake news.

The invention of reality has taken a further step forward with deep fakes, algorithms that create vivid, realistic videos of people, real or imagined, living or missing.

Conclusion

Une « ère post-vérité » qui donne du crédit aux « faits alternatifs »

Conclusion

A "post-truth era" which gives credit to "alternative facts"

In 2016, during the Brexit referendum and US presidential election campaigns phrases such as "post-truth era" and "post-factual era" were widely used. According to the British Dictionary of Oxford, these expressions refer "to circumstances in which objective facts have less influence in shaping public opinion than appeals to emotion and personal opinions". It was in January 2017, that the advisor of D. Trump, Kellyanne Conway, in response to a famous journalist, designated by "alternative facts" the false words of Sean Spicer, spokesman of the White House, according to which never the inauguration of a President had gathered such a crowd in Washington.

A constructivist era: the reinvention of oneself by oneself (and sometimes by others)

James Altucher, former IT developer and author of the famous "Reinvent yourself", says:

"Reinvention was the key to viewing life events in a positive light. Now the whole world (...) is upside down, forcing us to reinvent ourselves individually and culturally. "

He continues that he was thus able to "(...) find my own way through the chaos of change and discover the path to new opportunities for success. "

Is the future quantum?

Until the mid-1980s, the whole world was still in the paradigm of determinism: the past explained the present and shaped the future according to conceivable arithmetic rules. The evolutions followed long trends.

Then, the world lived in a growing instability compromising the most serious forecasts. Geopolitically, economically and socially, our horizon has become chaotic. Therefore, like weather forecasting models, the world could only be understood through nonlinear algorithms.

The Internet of Things, IoT, is a fact. Transhumanism and bionic surgery bring hopes as well as fears.

Are we on the way to entering a new paradigm?

The quantum computer is heralded as the next digital revolution bordering on the conceivable. Chinese neurological researchers have shown that human thought follows quantum dynamics.

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