ISSN (online): 2014-2242 / www.cac.cat

QUADERNS
DEL CAC

Towards a Critique of Algorithmic Reason. A state-of-the-art review of artificial intelligence, its influence on politics and its regulation

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Article received on 16/04/18 and accepted on 12/06/18

Abstract

Artificial Intelligence (AI) tools, combined with social media and Big Data technology, allow for highly personalised forms of political and commercial advertising. In the public sphere, computational propaganda is emerging as a techno-cultural change that jeopardises the freedom of citizens in their political choice, resulting in debate regarding the public regulation of AI to arbitrate such conflicts. In 2017, the European Parliament proposed the creation of a legal personality for robots. The problem is that personality*, both in law and philosophy, is based on* responsibility*, an anthropocentric concept that has always referred to human action. However, we must accept the existence of algorithmic reason, created by human reason but independent of it, which now influences the conditions both of politics and social harmony. That's why theoretical reflection is essential, especially in terms of ethics and their relation to technology and the law. Because not regulating AI condemns us to leaving citizens undefended and, ultimately, to technological determinism.*

Keywords

Artificial Intelligence (AI), computational propaganda, regulation, legal personality for AI, digital ethics.

Resum

Les eines de la intel·ligència artificial (IA), combinades amb les xarxes socials i el tractament del big data, permeten formes altament personalitzades de publicitat política i comercial. En l'esfera pública, la propaganda computacional apareix com un canvi tecnocultural que qüestiona la llibertat d'elecció política dels ciutadans. A partir d'aquí, es planteja el debat sobre una regulació pública de la IA que arbitri els eventuals conflictes. El 2017 el Parlament Europeu va suggerir la creació d'una personalitat jurídica per als robots. El problema és que la personalitat*, tant en termes jurídics com filosòfics, es fonamenta en la* responsabilitat*, un concepte antropocèntric sempre referit a una acció humana. Tot i així, constatem l'existència d'una raó algorítmica, creada per la raó humana, però autònoma d'aquesta, que condiciona ara ja la vida política i la convivència social. Per això és fonamental una reflexió teòrica, en especial en l'àmbit de l'ètica i la seva connexió amb la tecnologia i el dret. Perquè no regular la IA ens condemna a la indefensió ciutadana i, aquí sí, al determinisme tecnològic.*

Paraules clau

Intel·ligència artificial (IA), propaganda computacional, regulació, personalitat jurídica de la IA, ètica digital.

1. New political forms: computational propaganda

The report entitled *Can Public Diplomacy Survive the Internet? Bots, Echo Chambers, and Disinformation* by the United States Advisory Commission on Public Diplomacy tackles the question of fake news and the use of algorithms and other tools of Artificial Intelligence (AI). It contains the opinions of various experts regarding the problems of robots (or bots), echo chambers and misinformation in political processes (Powers and Kounalakis 2017).

First of all, it defines AI as "an evolving constellation of technologies enabling computers to simulate cognitive processes". Machine learning is a subset of AI and enables the interpretation of data, decision-making in an uncertain context and action to achieve a fixed objective. Machine learning is used by Google in its search algorithm and to provide personalised recommendations for online content (e.g. with Amazon and Netflix and Facebook newsfeeds).

Deep learning is a type of machine learning that handles large data sets, thanks to additional layers of processing resembling neuron structures in the brain. As a result, it provides high-level abstract models and recognises patterns in extremely complex data sets. Deep learning systems are widespread and not exclusive to large corporations or state governments. These AI tools are available to the public, for instance Google's Tensor Flow and Microsoft's Control Toolkit. An individual can therefore operate hundreds of bots on Twitter with minimal skill thanks to such tools and their availability.

Experts claim that over 10% of social media content and 62% of all internet traffic is generated by bots. It's estimated

that active Twitter accounts which are actually bots (with no direct human intervention) account for between 9% and 15%, representing 50 million Twitter accounts (Varol 2017).

In fact, chatbots can maintain substantial conversations with humans on complex subjects. By way of example, we can mention Xiaoice, the Microsoft chatbot in Mandarin. It has over 20 million personalised users with an average of 60 connections a month by each follower. Each connection has an average exchange of 23 interactions. In 2015, Xiaoice was China's top influencer on Weibo, the social media site equivalent to Facebook, and to a lesser extent on Twitter. In fact, some users confess to having a very close relationship with this "friend and confidante" who is always available (Markoff and Mozur 2015).

AI tools (bots, algorithms, etc.) combined with big data enable highly personalised forms of commercial and political propaganda. In 2014, the US trade regulator, the Federal Trade Commission (FTC), published a report on data brokers, companies that gather personal information and resell or share it with third parties. The FTC's aim was to achieve greater transparency and supervise such companies, which operate on the borderline in data protection terms (FTC 2014). In 2016, even before the US presidential election, publications such as *Newsweek* and *The New York Times* had already exposed this issue, providing information on the two main data brokers in the USA:

- Cambridge Analytica, which in 2016 stated that it had 3,000 to 5,000 individual data points and the psychological profiles of 230 million adult US citizens (McKenzie Funk 2016).
- Acxiom, which before the 2016 elections stated that it had an average of 1,500 data points on 200 million Americans (Boutin 2016).

In academia, the University of Oxford, through the Project on Computational Propaganda, is a leading centre in analysing the automation of political propaganda. The people in charge of this project, Samuel Woolley and Philip Howard, state that political campaigns, governments and individual citizens around the world use both people and bots in order to artificially shape public life (Woolley and Howard 2016).

"Bots, the automated programs integral to the spread of computational propaganda, are software intended to perform simple, repetitive, robotic tasks. They are used to computationally enhance the ability of humans to get work done online. Social media bots are automated identities that can do mundane tasks like collect information, but they can also communicate with people and systems. They are deployed to do legitimate jobs like delivering news and information. They also are used for more malicious activities associated with spamming and harassment. Whatever their uses, they are able to rapidly deploy messages, interact with other users' content, and effect trending algorithms—all while passing as human users. Political bots, social media bots used for political manipulation, are also effective tools for strengthening online propaganda and hate campaigns. One person, or a small group of people, can use an army of political bots on Twitter to give the illusion of large-scale consensus" (Woolley and Howard 2017).

This is where the term "computational propaganda" appears, seen as the concurrence of social media, independent AI agents and big data treatment, whose aim is to manipulate public opinion. Political bots are used on social media to fabricate trends, take advantage of hashtags, amplify certain content, send spam to the opposition and attack journalists. In the hands of powerful politicians with resources, such automated tools can be used both to promote and silence communication and citizen mobilisation, in authoritarian and also in democratic regimes (Woolley 2017).

The example provided by Samuel C. Woolley, Director of Research of the Computational Propaganda Project (Oxford Internet Institute), is the strategy employed by China against pro-Tibetan movements to suffocate the independence movement and boost the government's ideals. Citing the journalist Brian Krebs, "Tibetan sympathizers […] noticed that several Twitter hashtags related to the conflict—including #tibet and #freetibet—are now so constantly inundated with junk tweets from apparently automated Twitter accounts that the hashtags have ceased to become a useful way to track the conflict" (Woolley 2017).

Matt Chessen, a former fellow at George Washington University and actually in the US Government, explains that algorithms and other AI tools will soon be able to draft speeches, create press releases and generate text, images and video for social media. And they'll be able to do this more quickly than humans in terms of a rough draft. The question is therefore what can be done by journalists, governments and ourselves – and we would add, citizens in general –, to tackle bots that can interpret and react to news almost instantaneously via personalised content for individuals or homogeneous groups. "How can a government press release, or a carefully crafted, researched and fact-checked news article, or a corporate public relations campaign, precisely developed over months, ever compete with real time, personalized, always available, dynamically generated, instantaneous, machine-driven manipulative speech, text, video and other content?" (Chessen 2017).

Keir Giles is the author of a manual published by NATO on the information warfare waged by Russia on major Western countries (Giles 2016). This expert and member of the Royal Institute of International Affairs (Chatham House) explains that, according to the Russian conception, information warfare is not limited to times of war or even to the initial stage of conflict. Russia's foreign strategy is permanent information warfare on its adversaries. To underpin his arguments, Giles cites a document by Sweden's Defence Research Agency (FOI in Swedish). "Within the Russian Administration several organizations are responsible for handling information warfare capabilities including computer network operations, electronic warfare, psychological operations, deception campaigns (*maskirovka*) and mathematical programming impact. The latter

could be interpreted as including the introduction of malware and malfunctions such as back-door functionalities and 'logic bombs'" (FOI 2010).

In fact, the US Democratic Party has accused the Russian government of significantly interfering in the 2016 US presidential campaign, which resulted in Donald Trump's close-won victory. On 12 March 2018, the Republican majority in Congress (House of Representatives) ended the congressional committee investigating this affair, claiming there was no proof of such interference. The Democratic Party protested that the committee should not have been terminated as not all the key people listed as involved in the affair and required to appear had been questioned. The accusations were serious.

"The February 16, 2018 Special Counsel[1] indictment of individuals connected to the Russian Internet Research Agency further underscores the extensive planning, sophistication, organization, and scope of Russia's exploitation of social media platforms to influence American public opinion during the election. Russia's campaign amplified and influenced wide swaths of the U.S. electorate and infected public debate, with a clear purpose: to help the Trump campaign, vilify Hillary Clinton, and sow general discord—key points also confirmed in the January 6, 2017 Intelligence Community[2] Assessment. (...) The heads of our intelligence agencies have uniformly concluded that Russia will again seek to influence our elections. With the midterm elections now only months away, it is imperative that we develop a comprehensive understanding of Russia's 2016 covert and overt attack to adequately inform the American people about what happened, and to detect, deter, and counter, to the greatest extent possible, further attempts to influence our political process" (Congress of the United States 2018).

On 17 March, five days after the US congressional committee had been disbanded, the newspapers *The Guardian* and *The New York Times* jointly revealed the scandal of the fraudulent use of 50 million Facebook in the voting on Brexit and the US presidential election (Cadwalladr and Graham-Harrison 2018; Rosenberg, Confessore, and Cadwalladr 2018). Facebook subsequently estimated this figure as high as 87 million. On 16 May 2018, the US Senate contradicted Congress and endorsed the opinion held by the Intelligence Community, namely that Russia interfered in the 2016 US presidential election (Demirjian 2018).

2. Technological determinism or citizen freedom?

In the area of geostrategy, AI is playing an increasingly important role in the arms race between the US and China in terms of developing smart armies (information, drones, etc.). In 2013, Amazon took over from IBM to host the US government intelligence community's data cloud. Microsoft markets Azure Government, a cloud-computing service designed specifically for the different levels of the US administration. And, in 2017, Google signed the Maven Project with the Pentagon, a pilot scheme to accelerate the military's use of artificial intelligence. According to Scott Malcomson, former foreign editor of *The New York Times Magazine* (2004-2011), the USA has a comparative edge over China in this arms race. The development of AI in China only has one driving force (the military), while the US has two (the military and the market). So Google, Amazon and Microsoft also have a commercial interest (Malcomson 2018). Nevertheless, this duality in the US situation causes tension between the civil and military branches. In April 2018, thousands of Google employees sent an open letter to the company's CEO, Sundar Pichai, demanding that this project with the Pentagon be cancelled immediately and a corporate policy be passed that neither Google nor its contractors will ever build warfare technology (Shane, Wakabayashi 2018. Note: the link to this letter can be found in the article initially published by *The New York Times*).

But beyond this dystopian view of AI's effect on politics and geostrategy, we should also ask whether the world will (or can) be ruled by AI. Whether a psychological model can be created using big data from individuals in terms of their age, race, sex, weight, height, marital status, religion, income, assets, mortgage situation, purchases, social, cultural and political habits, health and investment behaviour (to list the most common examples) based on which a commercial or propaganda strategy can be implemented. It should be asked whether AI shapes our view of the world, whether it takes away our freedom as humans and whether it imposes a technological determinism on us.

Is there an antidote to how this technocratic model can manipulate democratic processes? It's the job of scientists in computing, in cognitive and social science and in communication to study how fake news is maliciously manipulated and becomes viral, as well as to develop and propose solutions (Shao *et al*. 2017, Ciampaglia 2018). One initial approach is to strengthen fact-checking, seen as tools for democracy-building in contexts of institutional crisis and representative legitimacy, be it at specific times (election campaigns) or continuously (Amazeen 2017).

Nevertheless, having explored the research published on the influence of fake news, on the bias produced by algorithms and on the creation of echo chambers, an almost unanimous idea can be found: scientific research refutes technological determinism. The main academic studies detected disprove the idea that the supremacy of AI may degenerate into authoritarianism.

The Reuters Institute for the Study of Journalism (RISJ, of the University of Oxford, is the main centre of excellence analysing the phenomenon of fake news.[3] In its report entitled *Measuring the reach of "fake news" and online disinformation in Europe* (February 2018), it states that "false news has more limited reach than is sometimes assumed. This is in line with what independent evidence-based analysis has found in the United States (e.g. Allcott and Gentzkow 2017; Guess, Nyhan and Reifler 2018; Nelson and Taneja 2018)."

Figure 1. Studies detected on the impact of fake news and the bias of algorithms

Bibliographic reference	Article title	Conclusion
Allcott, H.; Gentzkow, M. (2017)	"Social Media and Fake News in the 2016 Election"	Analysis of the dissemination of fake news in the 2016 US elections. Social media were not the main source of news in the 2016 elections. Only 14% of the population state that they were the main source.
Bakshy, E.; Messing, S.; Adamic, L. A. (2015)	"Exposure to ideologically diverse news and opinion on Facebook"	Comparison between the role played by Facebook's algorithmic bias, on the one hand, and the voluntary, intentional choice of Facebook users to access ideologically discordant content. This second variable plays a stronger role in terms of exposure to cross-cutting content.
Dutton, W. *et al.* (2017)	"Social shaping of the politics of Internet search and networking: Moving beyond filter bubbles, echo chambers, and fake news"	Study of the communication systems of Germany, Spain, USA, France, Italy, Poland and the United Kingdom. The results indicate that the risk of echo chambers, fake news and algorithmic bias is mitigated by each country's media culture.
Fletcher, R. *et al.* (2018)	"Measuring the Reach of 'Fake News' and Online Disinformation in Europe"	Analysis of the dissemination of fake news in France and Italy in 2017. The websites with fake news in these countries reach a minimal audience in the internet ecosystem. The online traditional media reach a lot more of the population and generate a lot more interaction.
Guess, A. *et al.* (2018)	"Selective Exposure to Disinformation: Evidence from the Consumption of Fake News During the 2016 US Presidential Campaign"	2016 US electoral campaign. During the period of October-November 2016, the consumption of fake news was concentrated in a small group. Almost 6 out of 10 visits to the websites analysed with fake news came from 10% of people with ultraconservative diets of online news.
Nelson, J.; Taneja, H. (2018)	"The Small, Disloyal Fake News Audience: The Role of Audience Availability in Fake News Consumption"	The consumption of fake news is limited to a small, disloyal group of very active internet users.
Newman, N.; Fletcher, R. (2017)	"Bias, Bullshit and Lies: Audience Perspectives on Low Trust in the Media"	Study of eleven countries on attitudes towards social media. Citizen trust in social media concerning information is much lower than in traditional media. Moreover, there is a vague awareness of the bias of news algorithms.
Vargo, C.; Guo, L.; Amazeen, M. (2017)	"The agenda-setting power of fake news: A big data analysis of the online media landscape from 2014 to 2016"	Study of websites with fake news from 2014 to 2016. Although an increasing phenomenon, these websites do not have too much effect and are also related to recognisable partisan media.
Watanabe, K. (2017)	"The spread of the Kremlin's narratives by a western news agency during the Ukraine crisis"	Study of Russia's information warfare during the Ukraine conflict. It is not proved that the media controlled by the Russian government managed to project a "Russian narrative" beyond its strict area of influence.

Source: author.

The report, which studies this malpractice in France and Italy throughout 2017, states that none of the websites disseminating fake news in the study had a monthly audience above 3.5% in 2017. Those with a larger audience accounted for less than 1% of the online population, both in France and Italy. In comparison, the most popular news sites in France (*LeFigaro.fr*) and Italy (*LaRepubblica.it*) had an average monthly audience of 22.3% and 50.9%, respectively. Moreover, in most cases both in France and Italy, the dissemination of fake news did not produce as many interactions as in the established media and brands (Fletcher, Cornia, Graves and Nielsen 2018).

Another RISJ study also relegates social media to a secondary position. Research carried out in 11 countries (Germany, Australia, Denmark, Spain, USA, France, Greece, Ireland and the United Kingdom) concludes that 24% of users trust social media to provide them with their news, compared with 40% for traditional media. There's a widespread belief that news feeds are polluted with inaccurate information and polarised in terms of ideology, possibly encouraged by social media algorithms and their handling of user profiles. However, there is also the complaint that social media users fuel such content by sharing it without reading it, and even less verifying its accuracy. Consequently, the study notes a general critical perception regarding the political information spread by social media. Nevertheless, there is a small segment of the population that does trust social media. In some cases these are outsiders; i.e. outside the mainstream and the news agendas of traditional media (Newman and Fletcher 2017).

Perhaps the dystopian narrative of the effects of AI on society mentioned in the first part of this article is too alarmist. Perhaps it's also self-serving. And, finally, perhaps it's deeply ideological, in the worst sense of the term, perceived as a theoretical construct that's lacking in factual terms and used to justify potentially self-serving political measures. Whatever the case, artificial intelligence and its array of tools must be regulated because of their considerable impact on society and the huge asymmetry between, on the one hand, the elite that's hyper-expert in the subject and the rest of citizens on the other. Legislation and its implementation via regulations are human devices to guarantee people can live together without conflict. In democracies, they are a guarantee of freedom.

3. Regulating AI: where does the responsibility lie?

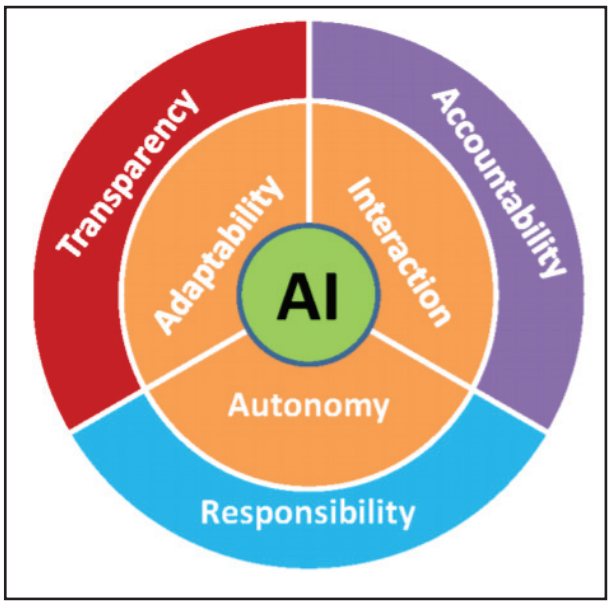
Virginia Dignum, a researcher from Delft Design for Values (DDFV, of the Delft University of Technology), tackles this debate regarding the possible regulation of robots and other AI tools. "As intelligent systems are increasingly making decisions that directly affect society, perhaps the most important upcoming research direction in AI is to rethink the ethical implications of their actions. Means are needed to integrate moral, societal and legal values with technological developments in AI, both during the design process as well as part of the deliberation algorithms employed by these systems" (Dignum 2017a).

A turning point in the discussion regarding how AI systems should be treated was provided by the article "On the morality of artificial agents", published by Luciano Floridi and Jeff Sanders in 2004. This paper noted that AI systems are characterised by their interactivity, autonomy and adaptability. For this reason, such technologies can be treated as "moral artificial agents" without them necessarily having mental states, feelings or emotions, as defined by the classical philosophers Montaigne and Descartes (Floridi and Sanders 2004).

In fact, Floridi has developed a sub-discipline called Data Ethics, seen as "a new branch of ethics that studies and evaluates moral problems related to data (including generation, recording, curation, processing, dissemination, sharing, and use), algorithms (including AI, artificial agents, machine learning, and robots), and corresponding practices (including responsible innovation, programming, hacking, and professional codes)" (Floridi and Taddeo 2016). To some extent, Data Ethics is like the R&D of AI governance and regulation. This approach has been influential and, in April 2018, Luciano Floridi, currently Director of the Digital Ethics Lab (Oxford Internet Institute), was appointed chair of the advisory board for the UK's Parliamentary Commission on Technology Ethics.

Taking the three properties of AI proposed by Floridi and Sanders (interactivity, autonomy and adaptability), Virginia Dignum has developed a system of principles for their practical application. In a report published by the International Telecommunication Union (ITU, the UN specialised agency for information and communication technologies), Dignum proposes the *ART Principles*, the acronym for *Accountability, Responsibility and Transparency*, which should govern the regulation of AI (see figure 2).

Figure 2. ART Principles applicable to AI



Source: Dignum (2017b).

- *Accountability* refers to the need to explain and justify an agent's decisions and actions to its partners, users and others interacting with the system. To ensure accountability, decisions must be derivable from, and explained by, the decision-making algorithms used.
- *Responsibility* refers to the role of individuals and also the capability of AI systems to answer for their decision and identify errors or unexpected results. There must be a moral and legal relationship between the decisions of algorithms and the people involved in these decisions.
- *Transparency* refers to the need to describe, inspect and reproduce the mechanisms through which the mechanisms employed by AI systems make decisions and learn to adapt to their environment. Current AI algorithms are basically black boxes, without open access. Methods are needed to inspect algorithms and their results. (Petit 2017)

However, the initial problem is that, in deep learning, once the process has been started and self-perfected, even the algorithm's designers can't explain the logic in the machine's decision-making. It therefore becomes difficult to propose that they should be responsible for any wrong decisions taken by the algorithm. But, in that case, we need to decide who is ultimately responsible for any injury caused by such errors and bias in AI decision-making.

This technical issue crossed the boundary of digital hyper-expertise thanks to a report by the European Parliament, approved on 27 January 2017, which contained recommendations to the Commission on Civil Law Rules of Robotics. Specifically, paragraph 59.f. asked the Commission to consider "creating a specific legal status for robots in the long run, so that at least the most sophisticated autonomous robots could be established as having the status of electronic persons responsible for making good any damage they may cause, and possibly applying electronic personality to cases where robots make autonomous decisions or otherwise interact with third parties independently" (European Parliament 2017a).

Shortly afterwards, in a Resolution passed on 16 February 2017, the European Parliament addressed this issue in greater depth, proposing the need to define and classify the different types of "smart robots" that carry out deep learning with a view to creating a register of advanced robots managed by an authority appointed by the EU. The Resolution also proposed a Charter on Robotics containing ethical principles for engineers and designers of smart robots, as well as a code for research ethics committees in the field of robotics.

On 25 April 2018, the European Commission published the Communication entitled *Artificial Intelligence for Europe*, as part of the EU's Strategy for the Digital Single Market (European Commission 2018). This document doesn't openly deal with the legal personality of robots but it does provide food for thought concerning this issue. Regarding questions related to ethics, it announces the creation of a European AI Alliance to develop guidelines in cooperation with the European Group on Ethics in Science and New Technologies, an advisory group for the Commission already in existence. It also announces its support for the Algorithmic Awareness Project (AlgoAware), a proposal made by the European Parliament to the Commission, whose aim is to develop an explainable AI ("*Explainability of AI Systems*"). AlgoAware is a 16-month study (stared in March 2018), with the following objectives:

- Contribute to a wider, shared understanding of the role of algorithms in the context of online platforms, raising public awareness and promoting debate.
- Identify and size up the types of problems and emerging issues and posed by the use of algorithms and establish an initial scientific, evidence-based foundation to tackle these problems.
- Draft or design solutions for certain problems, including policy options, technical solutions and private sector and civil society-driven actions.

Nevertheless, in opposition to this line of thought, there has been a reaction against the idea of granting robots a "legal personality". Figure 3 contains the most notable examples, signed by a group of experts, by the European Economic and Social Committee, and by COMEST, the advisory body for UNESCO in the area of ethics, technology and scientific knowledge.

A thorough, expert debate is therefore required, divorced from any views *contaminated by the movies*. Our starting point is the need for AI regulation that avoids technological determinism and guarantees citizens basic elements such as free political choice. Leaving AI development to be self-regulated "freely" (or, more precisely, not regulated) is equivalent to accepting the law of the jungle. It's the same as becoming inhibited when faced with the malicious interference of computational propaganda, described in the first paragraph of this article. It's an alarmist reaction, like the military demanding rights should be limited in the name of democratic control of the abuses committed. However, AI regulation must be adequate and proportionate; it must be coherent with Civil Law and must not contravene basic ethical principles.

Without pretending to be exhaustive, we note that Roman Law had already created the abstract figure of a legal or moral person as opposed to a physical person. Legal persons were abstract, body-less entities whose fictitious status as a person was recognised by Roman Law. They were legal subjects; i.e. entities which could acquire rights and assume obligations; they could be creditors and enter into debt; they had their own assets and could inherit wealth. But, unlike physical persons, they had no corporal existence. They had a common fund and a proxy to represent them but needed to represent a social or economic interest. In Rome, there were two types of (non-physical) legal persons: associations and foundations. So there were associations such as the Official Guild of Bakers, a privileged entity (exempt from tax) since bread was a basic need strongly regulated by the Empire (Michell 1947). Each legal person

had to have statutes, management bodies, representatives, a common fund or assets independent of its components and authorisation from a public authority, either the Senate or the Emperor (Kunkel 1984).

This abstract figure, befitting a complex society that requires elaborate legal developments, survived into the Middle Ages. In the mid-13th century, the renowned jurist Sinibaldo dei Fieschi (later Pope Innocent IV) incorporated the figure of a legal person into Canon Law. This led English Common Law, whose origins do not lie in Roman Law, to incorporate this figure as well within its legal system. And that was fundamental because the integration and consolidation of the legal person in both the continental and Anglo-Saxon systems was key to the transformation of 13th-century society, at that time still highly feudal and autarchic. Later on, it also helped to create mercantile societies such as the Indies companies, preceding the Industrial Revolution and the development of science and technology (for more information, see Díez Picazo 2016).

Could it therefore be argued that a legal personality for robots and elements of AI is coherent with Civil Law? Our civil codes today are the result of medieval Canon Law and, on continental Europe and its sphere of influence, of Roman Law. These legal traditions have resulted in the regulation of modern legal persons such as public limited companies. Or is it the case that limited companies are not abstractions in law and don't have legal personality, even though their accountability is clearly not linked to the physical people who constitute them? And don't media groups have a separate legal personality from their owners and workers? Moreover, the media are subject to their own particular legal principles, such as editorial responsibility.

However, there is one key issue that still needs to be resolved: ultimately, legal personality always depends on responsibility. And responsibility is an anthropocentric concept constructed historically to be applied to human actions, not to those of other animal species or non-human cognitive processes. The philosophical (and even religious) foundation and legal development of responsibility has always had a human basis. Naturally the personality-responsibility link could be reformulated. With Galileo, humans stopped being at the centre of the universe; with Darwin, humans stopped being the culmination of the living world; with Freud, conscience stopped governing the individual... If, with artificial intelligence,

Figure 3. Positions against giving a legal personality to robots and other AI tools

Open Letter to the European Commission on Artificial Intelligence and Robotics

We, Artificial Intelligence and Robotics Experts, industry leaders, law, medical and ethics experts, confirm that establishing EU-wide rules for Robotics and Artificial Intelligence is pertinent to guarantee a high level of safety and security to the European Union citizens while fostering innovation.

We are concerned by the European Parliament Resolution on Civil Law Rules of Robotics, and its recommendation to the European Commission in its paragraph 59 f).

From an ethical and legal perspective, creating a legal personality for a robot is inappropriate whatever the legal status model:

a. A legal status for a robot can't derive from the Natural Person model, since the robot would then hold human rights, such as the right to dignity, the right to its integrity, the right to remuneration or the right to citizenship, thus directly confronting the Human rights. This would be in contradiction with the Charter of Fundamental Rights of the European Union and the Convention for the Protection of Human Rights and Fundamental Freedoms.
b. The legal status for a robot can't derive from the Legal Entity model, since it implies the existence of human persons behind the legal person to represent and direct it. And this is not the case for a robot.
c. The legal status for a robot can't derive from the Anglo-Saxon Trust model also called Fiducie or Treuhand in Germany. Indeed, this regime is extremely complex, requires very specialized competences and would not solve the liability issue.

European Economic and Social Committee (EESC)
526a. Plenary Session from 31 May to 1 June 2017
(EESC 2017)
3.33 There is a lot of discussion regarding the issue of who can be held liable when an AI system causes damage, particularly if the AI system is self-teaching and continues to learn after entering into use. The European Parliament has drawn up recommendations for civil law on robotics, including a proposal to explore an 'e-personality' for robots so that they can incur civil liability for any damage they cause. The EESC is opposed to any form of legal status for robots or AI (systems), as this entails an unacceptable risk of moral hazard.

Report of COMEST on Robotics Ethics
(UNESCO 2017)
It is highly counterintuitive to call them 'persons' as long as they do not possess some additional qualities typically associated with human persons, such as freedom of will, intentionality, self-consciousness, moral agency or a sense of personal identity.

Source: Open Letter to European Commission – Artificial Intelligence and Robotics (2017), EESC (2017) and UNESCO (2017).

responsibility stops being the basis of legal personality, first there must be a huge cultural mutation. Because granting robots a legal personality without any ultimately human reference would renounce the anthropocentric nature of the concept and the whole cultural tradition this entails. It would be a *Copernican Revolution*.

Even so, hyperconnected democracy, capable of creating artificial intelligence, needs a legal system that regulates the new technological capabilities and that can arbitrate any conflict, abuse and injury. Let's go back to Floridi's idea that philosophy is the R&D of the regulation and governance of technology. In his *Critique of Practical Reason*, Immanuel Kant ends by confessing the two things he most admires: the starry heavens without (and the possibility of knowing this through science) and the moral law within (and each individual's possibility to act freely). If the Königsberg philosopher were alive today, he would certainly be fascinated by a third thing: artificial intelligence. He'd note that, in addition to pure reason and practical reason, an *algorithmic reason* has emerged, created by human reason but independent from it. And this would disturb his system of philosophy because it's not clear whether a *menschenähnliche* (human-like) responsibility can be assigned to algorithmic reason.

Nonetheless, in the face of new agents with a capacity to act, learn and take decisions that affect human life and how we live together in society, it is vital to propose regulation that is duly founded on ethical principles. It's crucial, in the words of Immanuel Kant, "to institute a court of justice, by which reason may secure its rightful claims while dismissing all its groundless pretensions". Such was the prologue of the Königsberg author's *Critique of Pure Reason*. We might also demand him the foundation of a court of justice for Algorithmic Reason.

Notes

1. The United States Office of Special Counsel (OSC) is a permanent independent federal agency whose primary mission is the safeguarding of the merit system in federal employment."
2. The United States Intelligence Community (IC) is a federation of 16 separate United States government agencies to support the foreign policy and national security of the United States.
3. The RISJ is mainly funded by the Thompson Reuters Foundation, together with other, more minor donors such as the BBC, Google and Open Society Foundations (George Soros's foundation network). The Thompson Reuters Foundation, core founder of the RISJ, is owned by Thomson Reuters Corp., a multinational based in Canada which also owns the Reuters News Agency, whose business is the provision of paid content. In addition to communication, the group also has businesses in finance, venture capital and pharmaceuticals (see: Thompson Reuters Corp. 2018).

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