WHAT IS THE STATE'S ROLE IN A WORLD DRIVEN BY AI TOOLS?

Veronica Mocanu[1]

DOI: 10.24989/ocg.v335.9

Abstract
Artificial Intelligence (AI) is one of those digital innovations that can fundamentally change the society including the public sector and its public servants. It may even help shape a new role and give new legitimacy to the public sector and governments in general. AI solutions (e.g. chatbots, process automation, and image recognition software) transform public sector work and the public sector workforce. In our acceptance, AI can save lives and greatly enhance safety by predicting potential risks or looming structural failures. In our day-to-day life, AI can streamline customer experience and create new experiences never imagined.

Even if we tend to develop, AI still remains an unknown world. We don't know by sure what is AI, we don't know if we have to monitor the AI's use, we haven't established yet the responsible authority, we are not sure about the opportunities of AI and if these opportunities will be ethically used and proposed in a transparent manner.

Information technologies are developed outside of the reaction of the state and faster than the law and legal provisions. Thus, by this article, we aim to identify legal and organizational constraints, which have to be settled in parallel with the development of AI systems.

1. Introduction

From the very beginning, the state was conceived as an ideal living environment, applicable to the human species, designed to eradicate chaos, to stop the selfish lusts of representatives of certain social strata, and to provide citizens with a peaceful environment of survival.

Over time, we noticed that the functions and role of the state have been re-conceptualized so that it must be established not only as a form of peacekeeping but also as an environment of optimal and friendly coexistence, capable to provide citizens with psychological comfort and development prospects.

In order to achieve the predetermined goal, there were initiated state foundation actions, developed complex operating mechanisms and established diversified forms of regulation.

However, due to the defective mechanisms, the mercantile tendencies of the state representatives, the intense politicization and the passivity of the social representatives, the state institution compromised its existence, abused the citizens' trust and threatened the existence of common living.

[1] State University of Moldova, Law Faculty, Department of Public Law, Chisinau (Moldova), http://usm.md/

The degree of development, the type, and form of organization of the state, generally determines the quality of life. However, over the last decade, information technologies have been identified as an instrument to ensure social welfare and to regain citizen's trust.

Therefore, we are witnessing the launch of a new form of social organization, driven by digitization and automation and the promotion of the idea of optimizing human activity through technology and substitution of human decisions with algorithms and automated actions.

The new technologies overturn the usual form of social organization and building a new form that is guided by the interests of ICT manufacturers and IT service providers based on consumer interests, market economy principles, information technology, and algorithms.

As a result, rhetorical questions arise: Will artificial intelligence kill or save the state? What is the state's role in a world driven by AI tools? How do we build a new social reality?

Through this article, we will support the idea that the existence of the state must be maintained and it should be ensured in parallel with technological development. By using new realities to streamline human activity and successfully carry out tasks allocated by citizens, the state should control the exclusive power to exercise authority over the developed technologies and algorithms.

Certainly, the world of artificial intelligence is a new step in the development of humankind that must not be stopped. Moreover, the advancement of this world must be controlled. Otherwise, the lack of control can generate irreversible situations and mechanisms.

In the evolution of the new world, we must start from the fact that Man is the center of the universe, and that the technique is meant to be used by humans rather than humans being used by new technologies. The technique, being perceived as a mechanism that improves the quality of life and generates human well-being, is just an attribute of social life and not a form of organization.

By creating a new social reality, the role of the state and of the law must not be threatened. The principles of organizing the World of Artificial Intelligence must be adjusted to the principles and the role of the state.

The role of the state as a social-political entity is considered to fulfill the following tasks:

- ensuring social organization and preventing the introduction of social chaos and social anarchy that generates war;
- elaboration of regulations and control over the social organization mechanism by implementing the state coercive force;
- ensuring social protection, over individual goods and personal interests, as well as undermining self-interest towards communities' ones;
- ensuring an optimal environment for coexistence and social development.

Considering the above mentioned, we believe that in the context of the development of new social realities, the state must maintain a monopoly on key actions related to the organization, regulation, protection, and continuity of the development of the quality of social life. Even with the

development of super-intelligent systems, the state must maintain control over the deployed algorithms in such a way to be able to control if they bring benefits to society and not vice versa.

As far as essential services are concerned, they are offered to ensure the realization of fundamental human rights and are preserved through the Universal Declaration of Human Rights.

2. Organization of relationships produced in context of development and deployment of AI tools

AI in practice is really the application of algorithms to data in a process that is controlled by humans. Therefore, in this sense governance needs to adapt to handle and regulate computer software that is used in activities that can affect human well-being such as voting machines, transportation, health systems, and many others.

Computer technology has advanced at such a rapid pace; government oversight has not been able to keep up. It is interesting to think that to build a bridge you must be a licensed mechanical engineer; however, software developers require no such license to work on many types of systems that can affect human life, such as medical devices.

Can we have governance for computer software without stifling innovation and delaying potential benefits to human life? I am not sure.

Thus, we believe that in assuring control over the development of AI services, the state must take urgent action. From an organizational perspective, the state should be concerned about organizing processes of development, standardization and control over intelligent artificial systems.

At the same time, from an organizational perspective, we must keep in mind that the use of intelligent artificial systems does not imply the existence of borders, which should lead us to initiate international co-operation and control. Given the intensifying worldwide activism in AI regulation and AI's anticipated substantial and global impact on human society, we propose a consistent international regulatory framework as its focal point — to streamline and coordinate national policymaking efforts.

From an organizational perspective, control bodies have to be set up at the level of the state, responsible for the elaboration of quality standards, issuance of the appropriate certificates, authorization, as well as control over the implemented systems. Moreover, we believe that from an organizational perspective, as a model for the organization of the AI domain, can serve the the Internet field and the practice accumulated up to now.

At the same time, we mention that the idea of standardization is already widely promoted in China and could be taken as an example by other states as well. Chinese government suggests that China plans to play a role in setting technical standards for AI, and Chinese companies would be required to adhere to these standards.

The Chinese government sees standardization not only as a way to provide competitiveness for their companies, but also as a way to go from being a follower to setting the pace, says Jeffrey Ding, a student at Oxford University's Future of Humanity Institute who studies China's nascent AI industry.

Attorney Matthew Scherer proposes a novel approach: he would create an agency tasked with "ensur[ing] that AI is safe, secure, susceptible to human control, and aligned with human interests, both by deterring the creation of AI that lack those features and by encouraging the development of beneficial AI that include those features." This theoretical agency would be responsible for developing policy and operating a certification program for AI developers, manufacturers, and operators; under this scheme, companies that obtain AI certification enjoy limited tort liability, whereas uncertified AI-related companies are subject to strict liability. The risks of strict liability and the inevitable costs of certification might prevent small startups from entering the market while favoring larger companies like Google, which can absorb the expense of either approach. However, Scherer's scheme otherwise strikes a fair balance between incentivizing safety and shepherding innovation [1].

Any number of organizational schemes could work, but the government should establish control over the future sooner rather than later—before it is too late.

3. Regulation of artificial intelligence

Regulating social relations is one of the most successful forms of establishing state control over a field. Regarding the regulation of the AI phenomenon, we still do not have a unanimous opinion, but by this article, we will insist on the need for urgent regulation.

AI regulation would improve our perception of safety, and our perception that humans remain in control and are in power to protect themselves. Existence of laws determines the predictability of legal relations and helps to promote citizens' trust in using and promoting the use of new systems. It could also mitigate any new risks, which the use of AI creates.

Thus, we need to understand that regulations are necessary, but proposed regulations should be developed in such a way as to be able to protect peoples against AI's risks and simultaneously promote innovations. It is also important that those who produce and use AI technologies are actually able to comply with regulation, and that regulation does not stifle worthwhile advances in the technology. Outside specifically regulated sectors, the general approach of law and regulation is that innovation is freely permitted, but that those responsible must bear the consequences if that innovation causes certain types of harm. If our existing law and regulation can deal with AI innovation in that way, no immediate change is needed. The argument, if one exists, for requiring all those who adopt an AI technology to demonstrate that it achieves a higher standard of performance and reliability than other innovations has not yet been made out [2].

Establishment of clearly defined rules are determined by the need to explain from legal point of view at least the following circumstances:

— What is an AI tool, AI software, or AI system;

— What kind of AI systems or AI functionalities could be considered as allowed or prohibited one?

— Situations in which public authorities should verify the validity of the results offered by the developed AI tools;

— Mechanisms that have to be used by AI developers and AI users in context of the release of the AI software or system;

— Rights and obligations of parties involved in the development, authorization and use of AI, as well as legal status of the authorities nominated to be responsible for the control in field of AI development.

3.1. Legal framing of the notion of AI

First point on which I will insist from regulation point of view will be the legal definition and the legal framing of the notion of AI.

Analyzing the regulations adopted until know, I did not find any regulation entitled to establish the legal dimension of the AI as new social reality. Generally the term is considered as an abbreviation of Artificial Intelligence and it is understood as a "*the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages*" [3], "a branch of computer science dealing with the simulation of intelligent behavior in computers " [4], or "*a system's ability to correctly interpret external data, to learn from such data and to use those learnings to achieve specific goals and tasks through flexible adaptation*" [5].

However, I appreciate the efforts of the European Commission, which state that AI refers *to systems that display intelligent behavior by analyzing their environment and taking actions – with some degree of autonomy – to achieve specific goals*. AI-based systems can be purely software-based, acting in the virtual world (e.g. voice assistants, image analysis software, search engines, speech and face recognition systems) or AI can be embedded in hardware devices (e.g. advanced robots, autonomous cars, drones or Internet of Things applications) [6].

More than that, at the end of 2018, European Commission have adopted a draft version of the Ethics Guidelines for Trustworthy AI and this document provide a more complex definition and provide definitions for AI as a system and AI as scientific discipline. According to the mentioned text, AI refers to *systems designed by humans that, given a complex goal, act in the physical or digital world by perceiving their environment, interpreting the collected structured or unstructured data, reasoning on the knowledge derived from this data and deciding the best action(s) to take (according to pre-defined parameters) to achieve the given goal*. AI systems can also be designed to learn to adapt their behavior by analyzing how the environment is affected by their previous actions.

As a scientific discipline, AI includes several approaches and techniques, such as machine learning (of which deep learning and reinforcement learning are specific examples), machine reasoning (which includes planning, scheduling, knowledge representation and reasoning, search, and optimization), and robotics (which includes control, perception, sensors and actuators, as well as the integration of all other techniques into cyber-physical systems).

However, the definitions provided by media in general refers the concept of artificial intelligence to some kind of ability to plan, reason and learn, sense and build some kind of perception of knowledge and communicate in natural language.

Analyzing the definitions mentioned above, I found that they do not provide an overview on functionality of artificial intelligence, that's why, by this article I propose to introduce a technical

definition, which could be further used as legal one or as point of reference for completing the legal framework. From my point of view, AI have to be understood primarily as a system or software determined by algorithms, settled up to mimic or supersede aspects of natural phenomena or/ and human intelligence, able to provide based on learned activities, better results and/ or new capacities for acting.

AI software can learn from data like images or text, experience, evolved, or anything else researchers are yet to invent. Secondly, we have to point that architecturally AI is determined by algorithms, formulas and capacity to use those formula for predicting or/ and acting.

One of the most important fact, which define the artificial intelligence, is algorithm. An algorithm is a set of instructions; however, the AI implies a system that can modify its algorithms in response to learned inputs rather than "givens". The output of an algorithm will not surprise its author, who could have reached the same conclusion "manually". The distinguishing feature of intelligence is the ability to surprise the author.

Taking in consideration the above mentioned, we are not able to affirm that the results of AI are always correct. Beginning from this conclusion, I will argue in this article that AI tools used should be verified, especially in strategic sectors, and a regulation should be established in this sense.

We witness a huge development of artificial intelligent tools and systems, our individual lives and our civilization as a whole are governed to an ever-increasing extent by algorithms and domain-specific artificial intelligence [7]. Well-known examples include such ubiquitous things as smartphones, smart homes, smart cities, air traffic control systems[2], internet search engines [8], self-driving cars [9]. The operation of such algorithms, for the most part, proceed without incident, but there is always the possibility that an unlikely “black swan” event [10] might occur, threaten to plunge the whole system into chaos. We have already witnessed errors in functioning of AI systems: in 2010, an unexpected "flash crash" in a US stock market left the financial world dumbfounded. The crash occurred because of computer algorithms interacting with the financial market in an unforeseen manner [11].

In March 2018 an experimental Uber vehicle, operating in autonomous mode, struck and killed a pedestrian in Tempe, Arizona—the first fatal accident of its kind. Another example of failure is an AI system designed to predict the likelihood of an offender committing yet another crime in the future had its predictions influenced largely by race. The system falsely predicted that black men were more likely to commit other crimes. Aside from being racist, the AI system was inaccurate in its predictions overall. This and multiple other examples show that AI predictions can be bigoted and unethical [12].

Analyzing the above mentioned examples, it is clear that AI algorithms are not yet in a perfect shape and technologies are still in process of development, that’s why I think that putting AI into mass circulation has to be supervised and controlled, otherwise, uncontrolled situations could happen. At this point, I will call for the urgent involvement of state in developing of regulations and control methods, over wise it could be too late and the state may lose the power of control.

[2] Tagesanzeiger. (2008). Computer-Panne legt US-Flugverkehr lahm. (http : / / www . tagesanzeiger. ch / ausland / amerika/ComputerPanne-legt-USFlugverkehr-lahm/story/13800972)

3.2. Legal view on functioning and characteristics of the artificial intelligent systems

Artificial intelligence is one of the most hyped terms in the 21st century, and yet one of the most misunderstood, and therefore, it is important to define and determine, from the legal perspective, all the phenomena's which could be covered by one or another term.

Very often, when talking about AI, we like to couple it with other terms such as Machine Learning, Deep Learning, and Neural Networks.

In general, an intelligent system processes information in three very distinctive stages: reception, interpretation, and learning. Reception is the process in which some receptors (e.g. eyes or ears of the human body) receives signals from the environment, and send those signals to a processing agent (i.e. the brain) in formats that are interpretable by the processing system (i.e. electromagnetic signals).

Then comes the interpretation process, in which the processing agent (i.e. the brain) performs three operations to the data sent by the receptors. Finally, based on the current state of the entire system (i.e. how hungry you are), the processing agent (i.e. the brain) determines the importance of each piece of information it receives, and present to the users only the information that passes a certain threshold (in humans, this is called attention). That is why when you are hungry; you are more likely to see apples and food compared to other objects.

In AI, interpretation usually happens in a large information processing system on the cloud, using sophisticated machine learning algorithms such as neural networks.

With recent developments in machine learning and game-playing algorithms (especially in deep neural networks), AI systems can exceptionally well identify objects based on a body of reference, enabling development of amazing innovations such as self-driving cars. However, we cannot stop here, since the library of reference used by the processing agent is limited, especially in the beginning of its life cycle (a baby might not know what an apple even is).

Taking in consideration the above mentioned, we conclude that quality of the result of the thinking is proportional to the quality of the information processing tools. You cannot establish a 100 percent orientation of intelligent car in case if the vision of that vehicle is limited.

As consequence, I consider, that designing the way of thinking of a system is a complex mechanism, and if we want to prevent potential damages or minimize them, we have to propose as process validation requirement a systematic evaluation, over wise you cannot be able to confirm the 100% validity of the result provided by AI tool.

More than that, actually, the AIs are good at classifying a situation into categories and optimizing based on the parameters provided. However, it cannot create these categories or parameters from scratch without help from human developers.

This is because AI "sees" the world as multiple, purely mathematical matrices, and does not have the intrinsic ability to empathize with human experiences unless we teach it to. So, from here we conclude another important characteristic of AI, which has to be considered in law making that quality of the AI's abilities depend not just by quality of processing tools but also by quality of experiences learned or settled.

Going far and far, we are witnessing how artificial intelligence software transform itself in autonomous bodies. A scholar of Stanford university Nils Nillson identifies the notion of artificial intelligence as „[an] activity devoted to making machines intelligent, and intelligence is that quality that enables an entity to function appropriately and with foresight in its environment. “ . Therefore, it is clear that artificial intelligent software will going to be transformed in autonomous entities created by humans with the idea to be able to complete the given tasks, while having the environment in regard. As a consequence, the autonomous character of the AI has to be inscribed in Law, and the regulations has to contain norms capable to limit the possibilities of autonomous actions of the artificial intelligence.

4. Protection against AI

While AI can foster and enable our values, like many other powerful technologies, its dual-use nature implies that AI can also be used to infringe them. As consequence, state should develop clear proactive and reactive measures oriented to prevent infringements and harms. A balance must thus be considered between what should and what can be done with AI, and due care should be given to what should not be done with AI. Of course, our understanding of rules and principles evolves over time and may change in the future.

For the moment, it is important to determine which AI uses are to be banned or subjected to special control. In the context of the above mentioned, we will point out that, firstly, we have to put under control, systems which by concept are able to affect the fundamental human rights of the citizen, as well as state security and peaceful development of the world.

AI owners should inform consumers about AI use and rights allocated. More than that, AI developers should be obliged to develop a by default protective scenario for people who are not interested to use AI tool but are interested to use companies services.

Software engineers are responsible for the design of the algorithms behind all of these systems. It is the software engineers who enable smart assistants to answer our questions more accurately, help doctors to improve the detection of health risks, and allow police officers to better identify pockets of rising crime risks. However, not all the times, the provided applications are compatible with basic security and human rights provisions. That’s why, we propose to establish as general rule for deployment of AI tools and systems – ethics screening.

Software engineers do not usually receive training in human rights law. Yet with each line of code, they may well be interpreting, applying and even breaching key human rights law concepts – without even knowing it.

For example, a ethics screening can help software developers understand what indirect discrimination is and why it is prohibited by law. (Any discrimination based on race, color, sex, language, religion, political or other opinion, national or social origin, property, association with a national minority, birth or other status is prohibited under article 14 of the European Convention on Human Rights.)

Direct discrimination occurs when an individual is treated less favorably based on one or more of these protected grounds. Indirect discrimination occurs when a rule that is neutral in appearance leads to less favorable treatment of an individual (or a group of individuals).

Similarly, understanding the intricacies of the right to a fair trial and its corollary, presumption of innocence, may lead to better-informed choices in algorithm design. That could help avoid the possibility that algorithms would presume that the number of police arrests in a multi-ethnic neighborhood correlates with the number of effective criminal convictions.

Even more importantly, it would assist them in developing unbiased choices of datasets that are not proxies for discrimination based on ethnicity or race. For example, wealth and income data combined with geographic location data may be used as a proxy for the identification of populations from a certain ethnic background if they tend to concentrate in a particular neighborhood.

Therefore, I think that, as soon as it is not too late, is time to call states to react, protect, and limit the development of harmful AI tools or systems. A special attention should be proved to autonomous weapons, self-driving cars, autonomous devices, health care products and human evaluation tools.

5. Conclusion

The AI technologies becomes more prominent every day. Developed in the context of evolution of digital technologies this new context represents a new and exciting time for all of citizens, companies, state and us.

In principle, the idea of having interconnected smart devices enabling efficient interaction between machines and humans, helping those in their daily tasks, may seem a uniquely beneficial scenario. Furthermore, if considered individually, the information generated by the devices and online platforms may seem irrelevant and even harmless. However, when combined, these data can reveal a detailed and intelligent scenario. This possibility has increasingly attracted the interest of companies seeking through information crossing techniques; get an unprecedented view of their consumers. The data from these various interconnected devices, algorithms, and autonomous mechanisms of action may pose risks to constitutional rights of users such as privacy, security, physical and emotional integrity, exposing them to enhanced risks and losses that they are not yet fully aware. Adding up to the increased potential for damage and challenges posed in the context of AI, there is still no satisfactory regulation by the law. It is an urgent necessity. Despite being civilly and constitutionally protected values, it is necessary for a specific law to ensure the enforcement of the security and privacy of users in this techno-regulated scenario from a meta-technology perspective of the law. The rule of law has an important role to play in the consolidation of constitutional rights in the new digital world. Without legal and binding obligations to review private companies' practices such as unconstitutional algorithms, uninformed content removal or treatment and sharing of personal data beyond the object of a certain service, these practices tend to increase even more with the enlargement of the AI. The challenge is to observe, analyses these practices, and measure their importance and risks while seeking to guide technology through efficient legal regulation, preserving autonomy, privacy and safety.

On the other hand, the users voluntarily provide their data online, feeding databases with a huge amount of personal information, without worrying about how systems oversee and treat their information. Therefore, it is essential that consumers be well aware of these risks and be even more careful with their data in an AI world.

No one knows for sure how the AI will affect our lives in the future. Integrated, related, targeted and combined data collected from smart devices, providing numerous opportunities for analysis of

this information and converting each information in a relevant information to be combined and analyzed. Whether or not, the way we interact with machines and algorithms tends to be more and more intense. Businesses, citizens and public authorities should weigh benefits and risks cautiously. Moreover, the state should be aware of its role in this context aiming to, on one side, not excessively hamper the economic and technological development in progress, and, on the other, regulate effectively these practices in order to curb abuses and protect the existing constitutional rights.

6. References

[1] LARIVIERE, A., Control the future: it's time for a federal artificial intelligence & robotics commission, 2018. Available at: https://www.georgetowntech.org/blogfulltext /2017/5/3, [Accessed 14 Dec. 2018].

[2] REED, C., How should we regulate artificial intelligence?, 2018, Available at: https://royalsocietypublishing.org/doi/10.1098/rsta.2017.0360, [Accessed 15 Dec. 2018].

[3] The English Oxford Living Dictionary. Available at: https://en.oxforddictionaries.com/ definition/artificial_intelligence, [Accessed 20 Dec. 2018].

[4] Merriam-Webster.com. Available at https://www.merriam-webster.com/dictionary/artificial% 20intelligence, [Accessed 15 Jan 2019].

[5] KAPLAN, A. M. & HAENLEIN, M., Siri, Siri in my hand, who is the fairest in the land? On the interpretations, illustrations, and implications of artificial intelligence. Business Horizons.

[6] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - Artificial Intelligence for Europe, Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A 2018% 3A237%3AFIN, [Accessed 14 Dec. 2018].

[7] SLAVIN, K., (2012). How Algorithms Shape Our World. Available at: http://ed.ted.com/lessons/kevin- slavin- how- algorithmsshape-our-world, [Accessed 1 Dec. 2018].

[8] PAGE, L., BRIN, S., MOTWANI, R. & WINOGRAD, T., Bringing Order to the Web, 1999. Available at: http://ilpubs.stanford.edu:8090/422/, [Accessed 1 Dec. 2018].

[9] TAGESANZEIGER, Computer-Panne legt US-Flugverkehr lahm, Available at: https://www.tagesanzeiger.ch/ausland/amerika/ComputerPanne-legt-USFlugverkehr-lahm/ story/13800972, [Accessed 1 Dec. 2018].

[10] TALEB, N. N., The Black Swan: The Impact of the Highly Improbable Fragility. Random House, 2010.

[11] Securities, U., Commission, E., & the Commodity Futures Trading Commission. (2010). Findings Regarding the Market Events of May 6, 2010. Report of the Stas of the CFTC and SEC to the Joint Advisory Committee on Emerging Regulatory Issues, Available at: https://www.sec.gov/news/studies/2010/marketevents-report.pdf, [Accessed 1 Dec. 2018].

[12] The Economist explains, May 29th 2018. Available at: https://www.economist.com/the-economist-explains/2018/05/29/why-ubers-self-driving-car-killed-a-pedestrian, [Accessed 1 Dec. 2018].

[13] AMITAI ETZIONI, OREN ETZIONI, Should Artificial Intelligence Be Regulated?. Available at: https://issues.org/perspective-should-artificial-intelligence-be-regulated/, [Accessed 1 Dec. 2018].