

DANIELE CHIAPPINI<sup>(\*)</sup>

## ARTIFICIAL INTELLIGENCE AND LEGAL CAPACITY: AN INTRODUCTION TO ROBOTIC SUBJECTIVITY

**Abstract:** The issues related to the development of artificial intelligence have recently been tackled by various countries and international organisations, with the application of technologies involving machine learning, neural networks and deep learning that are already in the market. This article deals with the issue related to Artificial Intelligence (AI) status and whether it is necessary to create a specific personality for them. Starting from AI definition, this research provides an overview of state-of-the-art rules related to the robotic status and to the hypothesis related to robotic subjectivity.

SUMMARY: 1. Introduction – 2. Artificial Intelligence: classifications and definitions. – 3. Hypothesis for AI subjectivity. – 4. Electronic Personality. – 5. Extra EU positions. – 6. Case studies robots' rights. – 7. Conclusions.

### 1. — *Introduction.*

Scientific development and new technologies make very difficult for legislatures keep laws and regulations up to date but the issues that innovations create have to be tackled from a legal point of view. Only as recently as January 2016, for example, the European Parliament issued a document entitled *Automated vehicles in EU*<sup>(1)</sup>, in which it is observed that «different national jurisdictions can hinder the development and deployment of new technologies for systems or vehicles. European mobility requires a harmonised approach towards these new technologies, while fragmented regulatory approaches would hinder implementation and jeopardise European competitiveness». Despite this view, the regulation of road traffic still follows the

---

<sup>(\*)</sup> Università degli Studi di Perugia.

<sup>(1)</sup> European Parliament, *Automated vehicles in EU*, January 2016, in [www.europarl.europa.eu](http://www.europarl.europa.eu).

Vienna Convention on Road Traffic signed in 1968 that, even with the last amendments<sup>(2)</sup>, still requires that every vehicle have a driver, even if in the European Parliament website it is stated that driverless vehicles will be on the EU market from 2020<sup>(3)</sup>.

This brief excursus into the field of driverless cars is symptomatic of a situation. Lack of regulation on some fields related to converging technologies and technologic unknown<sup>(4)</sup> has not prevented research from moving forward but, unfortunately, there are fields in which waiting it is not practicable, and lack of foresight could create social and legal problems. These areas include the robotics and artificial intelligence (AI) sectors.

The difference between these two sectors and others related to converging technologies and technologic unknown concerns the consequences of their commercialisation. It could be impossible to predict AI and intelligent robots' actions or decisions, even with narrow artificial intelligence<sup>(5)</sup>. This creates a situation that differs from other commercialised goods.

In light of this distinction and keeping the warnings of the scientific community in mind<sup>(6)</sup>, it is important to regulate the development of artificial intelligence and robotics since their inception. In this case, then, laws should anticipate the evolution of the science and not merely respond to it. An unregulated environment in these fields could lead to unsolvable problems, while

---

<sup>(2)</sup> Convention on Road Traffic, Nov. 8, 1968. On March 23, 2016, amendments to the 1968 Vienna Convention on Road Traffic entered into force and removed legal obstacles for the contracting parties to allow transferring driving tasks to the vehicle itself, provided that the technologies used are in conformity with UN vehicle regulations and can be overridden or switched off by the driver.

<sup>(3)</sup> European Parliament, January 2019, in [www.europarl.europa.eu](http://www.europarl.europa.eu).

<sup>(4)</sup> M. ROCO, W. BAINBRIDGE, *Converging Technologies for Improving Human Performance*, Dordrecht, 2002. The U.S. National Science Foundation and Department of Commerce commissioned the report.

<sup>(5)</sup> See chapter 2.

<sup>(6)</sup> In January 2015, Stephen Hawking, Elon Musk, and dozens of artificial intelligence experts signed an open letter on artificial intelligence calling for research on the societal impacts of AI. The letter affirmed that artificial intelligence has the potential to eradicate disease and poverty, but researchers must not create something which cannot be controlled.

shared regulations, if possible supranational, could aid in relevant research.

Regulations are necessary because the definition of the basic laws of robotics may in turn alter the meaning of “artificial intelligence” and, consequently, the field of application of the rule. Isaac Asimov’s three laws of robotics<sup>(7)</sup> have been recognised as the basis for the development of robots for many years. Yet currently the scientific community is wondering about their meaning and if they are sufficient; many believe these rules need an update<sup>(8)</sup>. According to this, in the last years have been presented some new principles, like “Asilomar Principles”<sup>(9)</sup>, the general principles identified by the IEEE in the report on “Ethically Aligned Design”<sup>(10)</sup>, and the report “Ethical Guidelines for reliable AI”<sup>(11)</sup> produced by the European Group on ethics in science and new technologies (EGE), but, nowadays, all these advices are only proposals and no lawmaker used them to regulate the artificial intelligence field.

## 2. — *Artificial Intelligence: classifications and definitions.*

First of all, it is necessary to understand what artificial intelligence means and how AI are classified.

---

<sup>(7)</sup> First law, A robot may not injure a human being or, through inaction, allow a human being to come to harm. Second law, A robot must obey the orders given to it by human beings, except where such orders would conflict with the First Law. Third law, A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

<sup>(8)</sup> Why Asimov’s Laws of Robotics should be updated for the 21st century, Accompany Project, March 2017: *cordis.europa.eu*. U. BARTHELMESS, U. FURBACH, *Do we need Asimov’s laws?*, in *MIT technology review*, May 2014, *www.technologyreview.com*.

<sup>(9)</sup> The Asilomar Principles are the outcome of the Asilomar Conference on Beneficial AI organized by the Future of Life Institute. These principles are a set of guidelines for AI research: *futureoflife.org*.

<sup>(10)</sup> IEEE, *Ethically aligned design a vision for Prioritizing Human Well-being with Autonomous and Intelligent Systems*, 2019.

<sup>(11)</sup> An independent, multi-disciplinary body which advises on all aspects of Commission policies where ethical, societal and fundamental rights issues intersect with the development of science and new technologies: *ec.europa.eu*.

In 1947 Alan Turing gave a public lecture related to computer intelligence, saying that «what we want is a machine that can learn from experience»<sup>(12)</sup>, with the possibility of altering its own instructions. In 1948 he wrote, but did not publish, a report entitled “Intelligent Machinery”<sup>(13)</sup>. Turing, with his idea, created the basis for what is known as artificial intelligence.

Since then, the issue related to AI definition has not yet been resolved either at a technical or legislative level and, at this moment, it doesn't exist a unique definition of Artificial Intelligence. It is therefore necessary to give some elements in order to understand what we are talking about.

The concept of Artificial intelligence could be divided into different categories. John Searle identified two different AI, the strong one and the weak (or narrow) one<sup>(14)</sup>.

The Oxford Dictionary defines strong AI as «a hypothetical form of artificial intelligence in which a machine can exhibit or simulate behaviour as intelligent as, or more intelligent than, that of a human being»<sup>(15)</sup>. On the contrary, weak (or narrow) artificial intelligence is able to accomplish simple tasks, often only one. It «would be useful for testing hypothesis about minds, but would not actually be minds»<sup>(16)</sup>.

A third category is the Artificial Super Intelligence (ASI). Oxford philosopher Nick Bostrom defines superintelligence as «any intellect that greatly exceeds the cognitive performance of humans in virtually all domains of interest»<sup>(17)</sup>. Accordingly, this AI will surpass human intelligence in all aspects and will be capable of exhibiting intelligence that humanity haven't ever seen. Actually, this kind of AI could be a subgroup of strong AI.

---

<sup>(12)</sup> A. TOURING, *Lecture to the London Mathematical Society on 20 February 1947*, 1947: *alan-turing.net*, [www.vordenker.de](http://www.vordenker.de).

<sup>(13)</sup> A. TOURING, *Intelligent Machinery: A Report by A.M. Turing* (22 pp.), 1948.

<sup>(14)</sup> J.R. SEARLE, (1980) *Minds, brains, and programs. Behavioural and Brain Sciences* 3.

<sup>(15)</sup> Lexico.com, a collaboration between Dictionary.com and Oxford University Press: *lexico.com*.

<sup>(16)</sup> K. FRANKISH, W.M. RAMSEY, *The Cambridge handbook of artificial intelligence*, Cambridge, 2014, p. 342.

<sup>(17)</sup> N. BOSTROM, *Superintelligence: Paths, Dangers, Strategies*, Oxford University Press, 2014.

From a juridical point of view, the issues related to what artificial intelligence is are likewise problematic, since there is no exhaustive and generally accepted description. It is therefore appropriate to take into consideration a series of documents that have been published by various institutions in the last years.

In particular, the European Parliament resolution concerning civil law rules on robotics<sup>(18)</sup> proposes common Union definitions of cyber physical systems, autonomous systems, smart autonomous robots and their subcategories by taking into consideration the following characteristics of a smart robot<sup>(19)</sup>: *a)* the acquisition of autonomy through sensors and/or by exchanging data with its environment (inter-connectivity) and the trading and analysing of those data; *b)* self-learning from experience and by interaction (optional criterion); *c)* at least a minor physical support; *d)* the adaptation of its behaviour and actions to the environment; *e)* absence of life in the biological sense.

In the document Artificial Intelligence for Europe<sup>(20)</sup> and in the Coordinated Plan on Artificial Intelligence<sup>(21)</sup>, the Commission considers as Artificial Intelligence «all systems that display intelligent behaviour by analysing their environment and taking action, with some degree of autonomy, to achieve specific goals».

These systems, AI-based, can be purely software-based, acting in the virtual world (e.g. Voice assistants, image analysis software, search engines,

---

<sup>(18)</sup> European Parliament, P8\_TA(2017)0051, Civil Law Rules on Robotics – European Parliament resolution of 16 February 2017 with recommendations to the Commission on Civil Law Rules on Robotics [2015/2103(INL)].

<sup>(19)</sup> European Parliament resolution on Civil Law Rules on Robotics, 2017, General principles concerning the development of robotics and artificial intelligence for civil use, n° 1, p. 6.

<sup>(20)</sup> Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, Artificial Intelligence for Europe, 2018.

<sup>(21)</sup> Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, Coordinated plan on Artificial Intelligence, 2018.

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)<sup>(22)</sup>. With these provisions, the EU institutions tried to take a position on the issue.

The European position is not shared from some non-EU countries. The report Artificial Intelligence and Robotics<sup>(23)</sup> of the United Kingdom House of Commons Committee on Science and Technology, recognises that there is a tendency to describe AI by contrasting it with human intelligence and stressing that AI does not appear in nature<sup>(24)</sup>. At the same time the document reports that, at present, the capacity of AI machines is narrow and specific. The Committee does not give a specific definition of AI, and this is consistent with the approach of the document, which prefers do not create *ad hoc* rules to regulate the matter but assigns the evaluation of ethical, legal and governance aspects to a specific Agency.

The US document Preparing for the future of Artificial Intelligence<sup>(25)</sup> dedicates an entire paragraph to the question “what is artificial intelligence”, but only concludes that there is not a universally accepted definition and it offers only several AI classifications related to existent models.

As it is possible to see, it is still not possible to give a univocal and generally accepted definition of AI. Despite this it is not possible to desist from the intent, due to the challenges placed by artificial intelligence development.

The European Parliament endeavoured to address the matter, adopting in the resolution related to civil law rules on robotics the following considerations<sup>(26)</sup>: *a*) it is necessary to create a generally accepted definition of robot

---

<sup>(22)</sup> European Commission, Communication Artificial Intelligence for Europe, 2018.

<sup>(23)</sup> United Kingdom House of Commons, Science and Technology Committee, Robotics and Artificial Intelligence, 2016.

<sup>(24)</sup> United Kingdom House of Commons, Science and Technology Committee, Robotics and Artificial Intelligence, 2016, p. 5.

<sup>(25)</sup> United States of America, Executive Office of the President, National Science and Technology Council Committee on Technology, Preparing for the future of Artificial Intelligence, 2016.

<sup>(26)</sup> European Parliament resolution on Civil Law Rules on Robotics, 2017.

and AI that is flexible and does not hinder innovation; *b*) the development of robotics and AI may have the potential to transform lives and work practices, raise efficiency, savings, and safety levels and provide an enhanced level of services; whereas in the short to medium term robotics and AI promise to bring benefits of efficiency and savings, not only in production and commerce, but also in areas such as transport, medical care, rescue, education and farming, while making it possible to avoid exposing humans to dangerous conditions, such as those faced when cleaning up toxically polluted sites; *c*) in the long term, the current trend leans towards developing smart and autonomous machines, with the capacity of being trained and making decisions independently, holds not only economic advantages but also addresses a variety of concerns regarding their direct and indirect effects on society as a whole; *d*) whereas there is a possibility that in the long term, AI could surpass human intellectual capacity; *e*) several foreign jurisdictions, such as the US, Japan, China and South Korea, are considering, and to a certain extent have already taken, regulatory action with respect to robotics and AI, and whereas some EU member states have also started to reflect on possibly drawing up legal standards or carrying out legislative changes in order to take account of emerging applications of such technologies.

In this Resolution the European Parliament tackled most issues arising out of the development of artificial intelligence and it considered fundamental to establish a common European definition and classification of “smart robots”, taking into consideration the following characteristics<sup>(27)</sup>: *a*) the capacity to acquire autonomy through sensors and/or by exchanging data with its environment (inter-connectivity) and the analysis of those data; *b*) the capacity to learn through experience and interaction; *c*) the form of the robot’s physical support; *e*) the capacity to adapt its behaviour and actions to the environment.

---

<sup>(27)</sup> European Parliament resolution on Civil Law Rules on Robotics, 2017, Annex to the resolution: recommendations as to the content of the proposal requested, p. 18.

### 3. — *Hypothesis for AI subjectivity.*

Have a clear definition of what is artificial intelligence is very important because it is linked to the idea of a juridical subjectivity for artificial intelligence.

This idea originates from the existence of legal capacity for a legal entity. Juridical personality is the characteristic of a non-living entity, regulated by law, of having the status of personhood. A juridical person has a legal name and specific rights, responsibilities and liabilities similar to those of a natural person. The concept of a juridical person is a legal fiction. Juridical personhood allows one or more natural persons to act as a single entity for legal purposes. In many jurisdictions, juridical personality allows that entity to be considered under law separately from its individual members<sup>(28)</sup>. They may sue and be sued, sign contracts, incur debt, own property and pay taxes. The concept of a juridical person is central in both common-law and civil-law countries and it may exist virtually in every legal system.

Some authors sustain that a similar approach could be used for artificial intelligence, i.e. allowing them to own ‘personal’ assets usable for subscribing obligations and contracts or, in the case of damages, be liable for damages caused to third parties<sup>(29)</sup>. Other options proposed were related to the slave condition in Roman law, in which the slave could own a separate estate from his *dominus* (called *peculium*), or to the figure of the *nuncius* – a subject that is only a harbinger<sup>(30)</sup>.

Actually, no one of these hypotheses could be supported for discussing the subjectivity of artificial intelligence, because none of them fully addresses the problem implicitly contained in the issue. Artificial intelligence is not an animal, it is not a child and it is not a slave or a messenger. Artificial intelligence is a different kind of intelligence. And it is not possible to compare or adapt it to anything in the past. It is necessary to apply effort toward determining what kind of legal capacity it should be assigned.

<sup>(28)</sup> E.A. QUINTANA ADRIANO, *The Natural Person, Legal Entity or Juridical Person and Juridical Personality*, in *Penn State Journal of Law & International Affairs*, Vol. 4, Issue 1, December 2015.

<sup>(29)</sup> G. SARTOR, *Gli agenti software: nuovi soggetti nel cyberdiritto?*, in *Contr. e impr.*, 2002., p. 465.

<sup>(30)</sup> G. TADDEI ELMI, *Soggettività artificiali e diritto*, 2004: [www.altalex.com](http://www.altalex.com).

During the last decade scientists and philosophers too have tackled these issues. Hilary Putnam hypothesised<sup>(31)</sup> that robotic behaviours could have a psychology similar to that of human beings. This construct has been called psychological isomorphism. Based on this view, Putnam wondered if robots should have civil rights, concluding that it is impossible to negate civil rights as applied to this type of intelligence.

After Putnam, other theorists took on the argument, arriving at various conclusions. Narayan and Perrott in 1986 claimed that a computer could be likened to a child who is capable of learning and working based on primitive instructions and with a limited ability to choose and evaluate past experiences<sup>(32)</sup>. Sartor, in his theory of intentional subjectivity<sup>(33)</sup>, posited that intelligent systems could have psychological states similar to those of humans because they can behave rationally toward an objective. He argued further that they are autonomous and unpredictable and can have a purpose. Upon that premise, he considers a reduced subjectivity for artificial intelligences that would allow applying the disciplines of both contract and responsibility.

Despite these interesting attempts endeavouring to scientifically assign a reduced subjectivity of the robot and informatics systems, some authors consider them totally unfounded<sup>(34)</sup>, characterising all the previous mentioned robots as no more than sleepwalkers.

#### 4. — *Electronic Personality.*

From *de iure condendo* point of view, the European Parliament has been quite forward-looking in this field including some statements in the resolu-

---

<sup>(31)</sup> H. PUTNAM, *Machines or artificially created life?*, in *The journal of philosophy*, Vol 61., n. 21, American philosophical association, 1964.

<sup>(32)</sup> A. NARAYAN, D. PERROTT, *Can computers have legal rights? In Artificial Intelligence. Human effects*, New York, 1984.

<sup>(33)</sup> G. SARTOR, *L'intenzionalità dei sistemi informatici e il diritto*, in *Riv. trim. dir. proc. civ.*, 2003, p. 23.

<sup>(34)</sup> G. TADDEI ELMI, *Soggettività artificiali e diritto*, cit.

tion Civil Law Rules on Robotics. It calls on the Commission, when carrying out an impact assessment of its future legislative instrument, to explore, analyse and consider the implications of all possible legal solutions, such as creating a specific legal status for robots, 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<sup>(35)</sup>.

The European Parliament did not ask only for a definition and classification of “smart robots”, but it recognised the necessity of a registration of smart robots for the purposes of traceability. The registration system and the register proposed should be Union-wide, covering the whole internal market<sup>(36)</sup>. Actually, a further wider regulation would be a better choice in this subject. A global registration and definition for smart robots, possibly worldwide, could be a better guarantee for both their development and production.

A central matter is related to the civil liability of robots and artificial intelligence. The Parliament sets forth that no damage to property nor the forms of compensation for damages caused by a non-human agent should be limited<sup>(37)</sup>. Moreover, it considers that the civil liability for damage caused by robots is a crucial issue which also needs to be analysed and addressed at Union level in order to ensure the same degree of efficiency, transparency and consistency in the implementation of legal certainty throughout the European Union for the benefit of citizens, consumers and businesses alike<sup>(38)</sup>.

As already hypothesised for technologic unknown damage,<sup>(39)</sup> the EU Par-

---

<sup>(35)</sup> European Parliament resolution on Civil Law Rules on Robotics, 2017, art. 59, letter F. p. 15.

<sup>(36)</sup> European Parliament resolution on Civil Law Rules on Robotics, 2017.

<sup>(37)</sup> European Parliament resolution on Civil Law Rules on Robotics, 2017, Liability, n° 52, p. 14.

<sup>(38)</sup> European Parliament resolution on Civil Law Rules on Robotics, 2017, Liability, n° 49, p. 14.

<sup>(39)</sup> C. VAN DAM, *Who is Afraid of Diversity? Cultural Diversity, European Co-operation, and European Tort Law*, in *King's Law Journal*, London, 2009.

liament asked for a legislative instrument based on the strict liability or on the risk management approach. Moreover, it has been requested that an obligatory insurance scheme be provided, supplemented by a fund in order to ensure damages could be covered in cases where no insurance cover exists.

To do this, the European Parliament suggest to the Commission to consider the following elements: *a)* establishing a compulsory insurance scheme where relevant and necessary for specific categories of robots whereby, similarly to what already happens with cars, producers, or owners of robots would be required to take out insurance cover for the damage potentially caused by their robots; *b)* ensuring that a compensation fund would not only serve the purpose of guaranteeing compensation if the damage caused by a robot was not covered by insurance; *c)* allowing the manufacturer, the programmer, the owner or the user to benefit from limited liability if they contribute to a compensation fund, as well as if they jointly take out insurance to guarantee compensation where damage is caused by a robot; *d)* deciding whether to create a general fund for all smart autonomous robots or to create an individual fund for each and every robot category, and whether a contribution should be paid as a one-off fee when placing the robot on the market or whether periodic contributions should be paid during the lifetime of the robot; *e)* ensuring that the link between a robot and its fund would be made visible by an individual registration number appearing in a specific Union register, which would allow anyone interacting with the robot to be informed about the nature of the fund, the limits of its liability in case of damage to property, the names and the functions of the contributors and all other relevant details; *f)* 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.

To respond to the European Parliament resolution, the Commission recognised the importance represented by AI and in particular the problems arising from the complex enabling ecosystem and the feature of autonomous decision-making. Accordingly, the situation requires, for the Commis-

sion, a deep consideration about the suitability of some established rules on safety and civil law questions on liability<sup>(40)</sup>.

The intent of the Commission was to launch a European Initiative on AI, following the invitation received from the European Council of October 2017 and the resolutions of the European Parliament on this matter.

The Commission did it by the Communication “Artificial Intelligence for Europe”<sup>(41)</sup>, which aimed to: *a)* boost the EU’s technological and industrial capacity and AI uptake across the economy, both by the private and public sectors; *b)* prepare for socio-economic changes brought about by AI by encouraging the modernisation of education and training systems, nurturing talent, anticipating changes in the labour market, supporting labour market transitions and adaptation of social protection systems; *c)* ensure an appropriate ethical and legal framework, based on the Union’s values and in line with the Charter of Fundamental Rights of the EU. This includes forthcoming guidance on existing product liability rules, a detailed analysis of emerging challenges, and cooperation with stakeholders, through a European AI Alliance, for the development of AI ethics guidelines.

About the last issue, in the Ethics guideline for Trustworthy AI the high-level expert group on Artificial Intelligence stated that AI should have three components<sup>(42)</sup>: *a)* it should be lawful, complying with all applicable laws and regulations; *b)* it should be ethical, ensuring adherence to ethical principles and values; *c)* it should be robust, both from a technical and social perspective, since, even with good intentions, AI systems can cause unintentional harm.

Despite all these efforts, as already explained, the Commission did not consider nor mention the “electronic personality” issue, as asked by an open letter<sup>(43)</sup> in which Artificial intelligence and robotics experts asked the Com-

---

<sup>(40)</sup> European Commission, Communication Artificial Intelligence for Europe, 2018, p. 15.

<sup>(41)</sup> European Commission, Communication Artificial Intelligence for Europe, 2018, p. 4.

<sup>(42)</sup> Independent High-level Expert Group on Artificial Intelligence, Ethics Guidelines for Trustworthy AI, 2019, p. 5.

<sup>(43)</sup> Open letter to the European Commission, Artificial Intelligence and Robotics: [g8fip1kpblyr33r3krz5b97d1-wpengine.netdna-ssl.com](mailto:g8fip1kpblyr33r3krz5b97d1-wpengine.netdna-ssl.com).

mission to ignore the Parliament's request about the creation of an "electronic personality".

According to the letter, a legal status for a robot can't derive from the Natural Person model, since the robot would then hold human rights.

Moreover, 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 lastly, the legal status for a robot can't derive from the Anglo-Saxon Trust model also called *Fiducie* or *Treuband* in Germany. Indeed, this regime is extremely complex, requires very specialized competences and would not solve the liability issue.

Actually, between the two positions, the one of the European Parliament and the one of the drafters of the open letter, the first one appears more capable of guarantee the respect of the rights of offended people. All the three sentences previously reported are true, and the concern that with the creation of an "electronic personality", manufacturers were merely trying to absolve themselves of responsibility for the actions of their machines is well founded. But the problem is related to all the situation considered into the European Parliament Resolution and in particular the fact that «the more autonomous robots are, the less they can be considered to be simple tools in the hands of other actors (such as the manufacturer, the operator, the owner, the user, etc.)»<sup>(44)</sup>. The Parliament, in turn, questions whether the ordinary rules on liability are sufficient or whether it is necessary create new principles and rules. These rules should provide clarity on the legal liability concerning responsibility for the acts and omissions of artificial intelligence where the cause cannot be traced back to a specific human actor and whether the acts or omissions of robots which have caused harm could have been avoided. And it is clear that among these rules the issue of the electronic personality is crucial, since «the current idea that the action considered by the law is by definition an action taken by a human being, or strictly referable to human beings, is false both because we have many examples of actions

---

<sup>(44)</sup> European Parliament resolution on Civil Law Rules on Robotics, 2017, Liability, letter AB, p. 5.

taken by no-humans that are considered by the law and because there are several examples of actions taken by humans that are not considered by the law at least in relationship with the human who performed it»<sup>(45)</sup>.

According to this, if from a political point of view the position of the European Commission could be accepted, from a scientific point of view it could not. This issue has been on the table since the first idea of artificial intelligence. Now, however, it is time to think about it comprehensively and in concert with the whole legal community. A narrow point of view, limited only to one country, may be nearly useless. It is necessary to have a wider movement as possible to consider the issue of artificial intelligence subjectivity.

#### 5. — *Extra EU positions.*

In the previous chapters it has been explained the state of the art related to the European Union situation. But several other Countries are taking into consideration the issues arising from artificial intelligence development. A recent document<sup>(46)</sup> reports 62 countries that are currently facing the issue related to the regulation of Artificial Intelligence.

In particular, in 2016, the United States federal government<sup>(47)</sup> and the United Kingdom Parliament<sup>(48)</sup> issued reports in which they affirm, differently from the EU position, that the regulation should be less restrictive, so as not to prevent the development of this kind of technology. This vision is absolutely clear in the US report, while is a little less liberal in the UK version. In particular, for the White House Office of Science and Technology

---

<sup>(45)</sup> A. SANTOSUOSSO, *If the agent is not necessarily a human being in Genetic, robotics, law punishment*, Padova University Press, 2015, p. 545.

<sup>(46)</sup> Law Library of US Congress, *Regulation of Artificial Intelligence in selected Jurisdictions*, 2019.

<sup>(47)</sup> White House Office of Science and Technology Policy (OSTP), *Preparing for the Future of Artificial Intelligence*, 2016.

<sup>(48)</sup> House of Commons' Science and Technology Committee, *Robotics and Artificial Intelligences*, 2016.

Policy (OSTP), the regulation of AI should aim to fit into extant regulatory schemes, with the government only defining the parameters inside of which it will be possible to use artificial intelligence.

In conclusion, «the OSTP report is an extensive review of the different ways in which AI will impact the economy and social structure of society. It provides a good overview of the various conundrums, ethical and otherwise. Yet, the US report could have acknowledged more clearly its underlying reliance on economic and political notions of free market trade, and market capitalism»<sup>(49)</sup>.

The US position is coherent with their point of view. Market is able regulate all the issues, included the ones emerging by the development of AI. Consistently, in the report the government does not take any position related to any kind of artificial personality. Among the 23 recommendations only one is related to ethics<sup>(50)</sup> and it only prescribe that «schools and universities should include ethics, and related topics in security, privacy, and safety, as an integral part of curricula on AI, machine learning, computer science, and data science». It seems that US government does not intend to consider any kind of legal personality related to AI.

The House of Commons' Science and Technology Committee report is aimed at identifying «the potential value and capabilities [of AI and robotics], as well as examining prospective problems, and adverse consequences, that may require prevention, mitigation and governance»<sup>(51)</sup>. It diverges from the US policy for its call for the development of novel regulatory frameworks, stating that «though some of the more transformational impacts of AI might still be decades away, others, like driverless cars and supercomputers that assist with cancer prediction and prognosis, have already arrived. The ethical and legal issues (...) are cross-cutting and will arise in

---

<sup>(49)</sup> C. CATH, S. WACHTER, B. MITTELSTADT, M. TADDEO, L. FLORIDI, *Artificial Intelligence and the "Good Society": the US, EU, and UK approach*, in *Science and Engineering Ethics*, 2017.

<sup>(50)</sup> White House Office of Science and Technology Policy (OSTP), *Preparing for the Future of Artificial Intelligence*, Recommendation 18, p. 42.

<sup>(51)</sup> House of Commons' Science and Technology Committee, *Robotics and Artificial Intelligences*, p. 7.

other areas as AI is applied in more and more fields. For these reasons (...) the ethical and legal matters raised by AI deserved attention now and that suitable governance frameworks were needed»<sup>(52)</sup>.

Similarly to the US report, the UK one does not consider the issue related by artificial personality, but it is more worried about the ethical issues emerging by the development of AI. Accordingly, the committee asked for the constitution of a Commission on Artificial Intelligence. «It should focus on establishing principles to govern the development and application of AI techniques, as well as advising the Government of any regulation required on limits to its progression. It will need to be closely coordinated with the work of the Council of Data Ethics»<sup>(53)</sup>.

The third case study is represented by China. In 2017 China presented an Artificial Intelligence Development Plan<sup>(54)</sup> that sets forth long-term strategic goals for AI development in China and it contains some “guarantee measures”.

In those measures is established that it is necessary to develop laws, regulations, and ethical norms to promote the development of AI<sup>(55)</sup> to ensure the healthy development of AI.

The purpose is conduct research on legal issues such as civil and criminal responsibility confirmation, protection of privacy and property, and information security utilization related to AI applications. In particular the paragraph states that it is important «clarify the main body of AI and related rights, obligations, and responsibilities» and «launch research on AI behaviour science and ethics and other issues, establish an ethical and moral multi-level judgment structure and human-computer collaboration ethical framework».

---

<sup>(52)</sup> House of Commons’ Science and Technology Committee, Robotics and Artificial Intelligences, p. 22.

<sup>(53)</sup> House of Commons’ Science and Technology Committee, Robotics and Artificial Intelligences, Recommendation 5, p. 36.

<sup>(54)</sup> China’s State Council, A Next Generation Artificial Intelligence Development Plan, 2017: *gov.cn*. English translation by G. Webster et al., 2017, available at *newamerica.org*.

<sup>(55)</sup> China’s State Council, A Next Generation Artificial Intelligence Development Plan, 2017, Guarantee measures, p. 25.

Like the European Union approach, it provides that an ethical code of conduct and R&D design for AI products must be developed, strengthen the assessment of the potential hazards and benefits of AI, and build solutions for emergencies in complex AI scenarios.

The report does not face the artificial personality issue, but the approach takes into consideration the ethical problems arising from the AI development.

All these examples, though not exhaustive, show how it is important to make artificial intelligence development a global challenge. Differences in regulation – actually differences of vision – could create an environment able to hinder research or create problems that could have a complicated solution in the future. The Chinese report states that «China will actively participate in global governance of AI, strengthen the study of major international common problems such as robot alienation and safety supervision, deepen international cooperation on AI laws and regulations, international rules and so on, and jointly cope with global challenges». This statement highlights the importance of a worldwide approach to AI development, even if, until now, there are only regional or country-based approaches. Analogously to the atomic energy, the research on artificial intelligence should be wisely globally regulated, starting with the definition of the meaning of artificial intelligence, the kind of legal capacity involved and the fundamental laws for its functioning, starting from Asimov's three laws of robotics.

#### 6. — *Case studies robots' rights.*

Despite the debate is still open, some countries recognised rights to some robots and it is important to have a brief overview of these situations.

The first case is represented by Sofia, a robot developed by Hanson Robotics Limited activated in 2015<sup>(56)</sup>. In 2017 Sofia, that positions itself as a

---

<sup>(56)</sup> Hanson Robotics: *hansonrobotics.com*.

woman and looks like a female, received the citizenship of Saudi Arabia<sup>(57)</sup>. This contradicts the norms of Saudi Arabia citizenship that can be obtained by birth, marriage or naturalization under determinate conditions<sup>(58)</sup>, not respected by Sofia. Moreover, the case contradicts the accepted model of female behaviour in Saudi Arabia society and female rights in Saudi Arabia<sup>(59)</sup>.

The second case is related to a residence permit granted by Japan to the chatbot Shibuya Mirai<sup>(60)</sup> in contradiction with Japan laws related to residence permit procedure<sup>(61)</sup>. Moreover, as a chatbot it does not have a physical body, so the concept of “residence” sounds quite weird.

In both cases a right has been granted to a robot in contradiction with the laws of the State. But the problem is that in absence of a recognised status for artificial intelligence these rights mean nothing. No one of the two AI can exercise the rights connected to citizenship nor the residency. And no one of them can be considered citizenship or resident. The choice seems more a marketing initiative than a political and legal decision.

A totally different position is the Estonian Government one.

In 2017, Estonia’s national digital adviser, Martin Kaevats, proposed the adoption of a special AI law aimed at granting a legal personality to AI, with corresponding amendments to liability insurance legislation<sup>(62)</sup>. In May 2019 a multidisciplinary group of experts produced a study on artificial intelligence<sup>(63)</sup> that may serve as the country’s first AI strategy. The report, known as the Kratt report, aims at outlining the principles upon which the

---

<sup>(57)</sup> The Independent, Saudi Arabia grants citizenship to a robot for the first time: *independent.co.uk*.

<sup>(58)</sup> Reaching the legal age; fluent in Arabic; settlement over 10 years; legitimate way of earning; no criminal record; compliance with the norms of conduct set out in the country.

<sup>(59)</sup> A. ATABEKOV, O. YASTREBOV, *Legal Status of Artificial Intelligence Across Countries: Legislation on the Move*, in *European Research Studies Journal*, Vol. XXI, Issue 4, 2018, pp. 773-782.

<sup>(60)</sup> Bioedge, 2017: *bioedge.org*.

<sup>(61)</sup> Japan external trade organisation, Residence management system: *www.jetro.go.jp*.

<sup>(62)</sup> B. TROCZYNSKI, *Estonia Plans the Boldest AI Regulations*, in *newtech.law*, 2017.

<sup>(63)</sup> Estonian Artificial Intelligence: Report of the Expert Group on Deployment: *riigikantselei.ee*.

legal framework for AI will be based and documents the shift in Estonia's approach to creating a legal framework for AI<sup>(64)</sup>.

The report recommends adopting the same approach to a legal framework for AI as that of the European Union. According to the chief information officer of the Estonian government, the «European Union has proposed a framework for the implementation of responsible artificial intelligence. We want to build on the EU framework, not to start creating and arguing for it ourselves»<sup>(65)</sup>. Accordingly, in May 2019, the government of Estonia signed the Organization for Economic Co-operation and Development's (OECD) Principles on Artificial Intelligence<sup>(66)</sup>.

Currently, no other initiative related to the Artificial personality has been announced, but the Estonian government set a pilot program of the Ministry of Justice to automate small claims court judgments in disputes concerning the payment of a maximum of € 7.000,00<sup>(67)</sup>.

## 7. — *Conclusions.*

As affirmed by the EU Parliament in the 2017 resolution, «ultimately, the autonomy of robots raises the question of their nature in the light of the existing legal categories or whether a new category should be created, with its own specific features and implications»<sup>(68)</sup>. All the issues tackled in this paper will have no answer if, firstly, the scientific community will not deal with the problem of the definition and the status of artificial intelligence.

Someone thinks that it is not useful to classify or give a specific defini-

---

<sup>(64)</sup> Library of the US Congress, Estonia: Government Issues Artificial Intelligence Report, 2019.

<sup>(65)</sup> R. LIIVE, *Estonian State IT Manager S. Sikkut: If There Were 1% in the State Budget for Science, We Could Talk More About Kratind*, Digigeenius, 2019.

<sup>(66)</sup> Organisation for Economic Co-operation and Development, Recommendation of the Council on Artificial Intelligence, 2019: *legalinstruments.oecd.org*.

<sup>(67)</sup> *Www.wired.com*.

<sup>(68)</sup> European Parliament resolution on Civil Law Rules on Robotics, 2017, letter AC, p. 5.

tion of robots and artificial intelligence<sup>(69)</sup> since the continuous evolution of digital technologies and the multifunctional potential of each machine would render useless any classification attempt. Even if this approach could be sustained, it is still necessary to understand what is artificial intelligence, in order to create rules that can regulate its artificial life and guarantee the rights of the people that produce, use or interact with AIs.

Regarding the problem of defining AI, it is necessary to determine the border between strong and narrow artificial intelligence, because distinguishing these two categories will have a deep impact on the applicable legislation. This is because for the first group it may not be possible to apply existing rules, since their unpredictable human-like behaviour, still only hypothesised, while it is possible to do so for the second.

Thanks to the definitions and characteristics fixed by the European resolution on Civil law on robotics, there is a good starting point. However, in order to completely solve the issue, lawmakers must take on the problem of the juridical personality for artificial intelligences. Is it possible to hypothesise a different and new kind of capacity, the robotic personality, or electronic personality, as proposed by the European Parliament? The main question is the same as that posed in 1960 by Putnam: can a robot have rights? And the next step is: All the robots must share the same rights or it is possible to have different levels of rights for different kinds of AI?

If strong and super artificial intelligence has intellectual processes similar to those of humans, there would be no ontological-quantitative difference between the human brain and the electronic brain, or between human intelligence and the artificial one, as theorised by Putnam and sustained by Freitas in 1985<sup>(70)</sup>. The only difference would be the physical support, the human head, that is biological, and the structure of a computer or robot, that is artificial. Assuming this as a fundamental condition for the existence of strong artificial intelligence, completely indistinguishable from human

---

<sup>(69)</sup> M. ALOVISIO, et al., *The law of service robots*, Naxa Center for Internet and Society, Politecnico di Torino, 2015.

<sup>(70)</sup> R.A. FREITAS, *The legal rights of robots*, Student lawyer, 1985: [rfreitas.com](http://rfreitas.com).

intelligence, should the law recognise the same rights as humans to artificial intelligence?

Honestly, this point of view, sustained by Putnam seems not acceptable. A solution could be the creation of a status that assign to IA some rights, rights that should not be the same as the human, but that will be able to completely regulate the interactions between AI and human beings, safeguarding the rights of the latter. Moreover, also weak AI should have their own personality, but circumscribed to the essential one to guarantee people that interact with them. This is the most urgent situation to regulate, because differently from strong AI we already use weak artificial intelligences.

The problem is understanding which rights should be accorded to artificial intelligence and how to protect them. Indeed, it will be necessary to create a system that could enforce violations related to those rights. Once such a system is created, it will be necessary to set the rules in order to activate it and to create appropriate defending procedures. Should strong and super artificial intelligence have the right to “live”? Should they have the right to own property? And about narrow artificial intelligence? Should they have a “peculium” to guarantee compensation to humans in case of damage? Are AI mere objects? Setting timely rules in order to address these and other questions will be the first purpose for all the scientific and juridical community involved in this field. Because of this, the proposal made by almost all the documents above considered<sup>(71)</sup> to create an Agency for Robotics and Artificial Intelligence is absolutely supportable and should be approved as soon as possible.

The last aspect is related to the other side of the issue. Where there are rights, there are also duties. For artificial intelligence, this element is easier to solve than the human one, because the duties of artificial intelligence can be written in the algorithms that govern their behaviours. Starting from

---

<sup>(71)</sup> The European Parliament resolution on Civil Law Rules on Robotics, the House of Commons’ Science and Technology Committee report on Robotics and Artificial Intelligences and the China’s State Council report on A Next Generation Artificial Intelligence Development Plan asked for the creation of an Agency for Robotics and Artificial Intelligence. Only the UK proposal had a follow up.

Asimov's three laws of robotics, it is possible to create a global basis for the development of the artificial intelligence and it will be possible to insert other kinds of rules that AI must follow, codifying their duties.

In conclusion, it is absolutely clear that the regulation of artificial intelligence development is a primary issue for of the 21<sup>st</sup> century. It should be tackled with a global worldwide cooperation with the aim, on one hand, to create the right conditions to develop artificial intelligence and, on the other hand, to create the legal substrate related to all the questions arisen since the idea of AI took its first steps.

From this point of view, the European Parliament proposals related to both Electronic Personality, the creation of a Charter of robotics<sup>(72)</sup>, a code of ethical conduct in the field of robotics that will lay the groundwork for the identification, oversight and compliance with fundamental ethical principles from the design and development phase, and the creation of an European Agency for robotics and Artificial Intelligence would be two steps in the right direction.

---

<sup>(72)</sup> European Parliament resolution on Civil Law Rules on Robotics, 2027, Charter on Robotics, p. 19.