

Electronic Personhood: A Compact Analysis of Legal Personality for Artificial Intelligence

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KEYWORDS	artificial intelligence – personality – legal capacity – responsibility gap – liability
ZUSAMMENFASSUNG	Der rechtliche Status von künstlicher Intelligenz (KI) ist unklar und es ist möglich, KI als Waren, Produkte oder digitale Dienstleistungen zu kategorisieren. Angesichts der rapiden technologischen Entwicklung wird diskutiert, ob KI-Systemen Rechtspersönlichkeit zuerkannt werden kann. In diesem Artikel wird das Konzept der Rechtspersönlichkeit untersucht und kritisch analysiert, ob KI-Systemen Rechtspersönlichkeit zuerkannt werden sollte.
RÉSUMÉ	Le statut juridique de l'intelligence artificielle (IA) est incertain et il est possible de classer l'IA en tant que biens, produits ou services numériques. À la suite de l'évolution rapide de la technologie, la question de savoir si les systèmes d'IA peuvent se voir accorder la personnalité juridique fait l'objet d'un débat. Cet article vise à examiner le concept de personnalité juridique et à analyser de manière critique l'opportunité d'accorder la personnalité juridique aux systèmes d'IA.
ABSTRACT	The legal status of artificial intelligence (AI) is uncertain and it may be possible to categorize AI as goods, products or digital services. Following the rapid developments in technology, it is being discussed whether AI systems can be granted legal personality. This article aims to examine the concept of legal personality and critically analyse whether legal personality should be granted to AI systems.

I. Introduction

The concept of attributing personality to non-human entities, also known as legal personality has a rich history: In Ancient Rome, certain organisations such as *sodalitates* and *collegia* were recognised as legal entities with proprietary capacity and were held separate from the individuals who formed them.¹ In Medieval Europe, churches and monasteries were legally recognised as separate entities subject to legal rights.² During the age of discovery, ships were granted legal personality with the power to contract, sue and be sued for increasing commercial efficiency and limiting liability.³ This concept later extended to recognising partnerships of trade, insurance and bank-

ing; eventually evolving into granting legal personality for corporations. Following technological developments, the legal discourse now focuses on the controversial suggestion that robots and AI should be granted a special type of legal personality also known as “electronic personality” where they would have a set of rights and obligations, such as the right to own property, freedom to enter contracts and civil liability for the damage they cause to others. This article aims to explore whether AI should be given legal personality from a European law perspective with comparative remarks.

II. Defining Legal Personality

A. Natural vs. Legal Personality

Generally, the concept of personality is categorised into two: natural personality and legal personality. Natural personality is granted to physical persons and is closely related to fundamental rights, legally protected interests and human dignity.⁴ All humans acquire personality which enables them to be the subject of rights, starting

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¹ RUDOLF SOHM, *The Institutes: A Text-Book of the History and System of Roman Private Law*, 2nd ed., Holmes Beach Florida 2001, 199.

² LAWRENCE B. SOLUM, *Legal Personhood for Artificial Intelligences*, *North Carolina Law Review*, 1992/70, 1231 et seqq., 1239.

³ BRYANT SMITH, *Legal Personality*, *Yale Law Journal*, 1928/37, 283 et seqq., 287-288.

⁴ MICHAL RUPNIEWSKI, *Human Dignity and the Law: A Personalist Theory*, London 2023, 127.

from birth until death.⁵ Personality should not be confused with capacity, as personality is always given to a human regardless of what mental or physical status they are in. However, legal capacity to act, meaning the power to create legal effect through one's actions⁶ depends on several other factors, such as being of major age and having the power of discernment.⁷ Persons with limited or no capacity to act are still granted natural personality but they would not be allowed to exercise all rights and freedoms⁸, such as entering into contracts, performing legal transactions or becoming guarantors. Therefore, personality and entitlement to hold rights cannot be simply equated⁹ and the scope of rights and obligations within the legal framework may vary among different persons.¹⁰

Legal personality diverges from natural personality and it can be attributed to non-human entities, such as corporations, associations and foundations. Legal personality is an artificial concept created to allow institutions to have a separate existence from the persons establishing them.¹¹ A company owning property in its own right is different from the shareholders of that company collectively owning property. Reasons to grant legal personality to institutions are: (i) giving them a separate legal stance with a set of rights and obligations, (ii) making it possible for people to directly engage or contract with the establishment instead of the individuals associated with it, (iii) ensuring more productive facilitation of transactions, such as managing assets and debts, bookkeeping, tax duties and administration of bank accounts, (iv) introducing a separate entity that will be directly liable in case of contractual claims or damage claims, (v) ensuring there is no suspension in economic activities due to issues arising from human nature, such as the death of an associate, (vi) generally increasing the trust and legal security in the market and society.

⁵ ELISABETTA FIOCCHI MALASPINA/GIULIA ROSSI, Law of Persons, in: MARC THOMMEN, Introduction to Swiss Law, 2nd edn. Zurich 2022, 253 et seqq., 256.

⁶ Swiss Civil Code Art. 12.

⁷ FIOCCHI MALASPINA/ROSSI (fn. 5), 255.

⁸ *Ibid.*

⁹ VISA KURKI, Legal Personhood and Animal Rights, Journal of Animal Ethics, 2021/11, 47 et seqq., 52 (cited as Animal Rights).

¹⁰ VICTOR SCHOLLAERT, AI and Legal Personality in Private Law: An Option Worth Considering?, European Review of Private Law, 2023/31, 387 et seqq., 393; ROBERT VAN DEN HOVEN VAN GENDEREN, Do We Need New Legal Personhood in the Age of Robots and AI?, in: MARCELO CORRALES/MARK FENWICK/NIKOLAUS FORGÓ (eds.), Robotics, AI and the Future of Law, Singapore 2018, 15 et seqq., 21.

¹¹ MARTIN WOLFF, On the Nature of Legal Persons, Reprinted from The Law Quarterly Review No. CCXVI, 1938, 494 et seqq., 496.

B. Granting Legal Personality to Non-Humans

1. Personality of Institutions

Classical examples of legal persons are states, international organizations, corporations, associations and foundations. Private institutions such as corporations can be established and exist under relevant national laws. However, states and international organizations are subject to different conditions for their establishment, as they are instruments of international law. States acquire their personality through constitutions and by being recognized by other states on the international stage. International organizations such as the European Union or the United Nations acquire their personality as per the agreements between states who create them.

The principles of legal personality for institutions differ from the principles of natural personality for humans, as legal personality is determined by law for practicality and legal security, but natural personality is based on protecting of fundamental human rights. Institutions have rights, such as the right to own property, conduct a business and freely enter into contracts as well as legal obligations such as the obligation to pay taxes, report finances and pay wages. Institutions are also capable of suing or being sued in court. In most cases, procedural rules applicable to institutions are parallel to the rules for natural persons. For example, corporations are not born like humans, thus their personality does not start with being born but with being entered into commercial registry.¹² Similarly, a corporation does not die like humans, thus their personality ends with dissolution instead of physical death. Unlike humans who have intentions and will, corporations' will is formed by their governing bodies.

2. Environmental Personality

Lately, there has been a notable tendency to attribute legal personality to new entities, extending beyond traditional institutions. One of the most interesting examples is the attribution of legal personality to elements of nature such as forests, lakes, rivers and parks; a concept also known as environmental personality. Environmental personality is not a direct personification of natural elements, but an attribution of particular rights to nature so that people and communities could advocate for its behalf.¹³ Although the idea of environmental personality was not accepted in any

¹² Swiss Civil Code Art. 52.

¹³ SIMON CHESTERMAN, Artificial Intelligence and The Limits of Legal Personality, International and Comparative Law Quarterly, 2020/69, 819 et seqq., 824.

international convention¹⁴, it can be observed on a national level. For example, New Zealand recently granted legal personality to *Te Urewera* national park and *Whanganui* river through legislation.¹⁵ Ecuadorian constitution refers to the rights of Earth Mother.¹⁶ Similarly, Bolivian law recognises the rights of Mother Earth and indicates that all people and communities could take legal action for their protection, although not directly granting it a legal personality.¹⁷ In the USA, Lake Erie was granted legal personality to allow the residents to sue polluters on the lake's behalf.¹⁸ The recognition of environmental personality is especially relevant in countries where indigenous cultures have a perspective of recognising nature as a distinct life force with spiritual importance.¹⁹

The reasons for granting environmental personality to natural elements can be identified as follows: (i) introducing an additional mechanism for the protection of nature and the environment by not considering them as properties of the government but as legal persons of their own, (ii) allowing all citizens and communities to advocate for the rights and protection of the nature, (iii) respecting cultural beliefs of indigenous people and recognising the value of the environment they consider sacred, (iv) bene-

fitting the society and future generations as environmental degradation and climate change are important challenges of our times and the preservation of nature is an urgent need. However, environmental personality is not recognised on a European law level.

3. Personality of Animals

Animals have been traditionally classified as property and not as persons, yet there had been a historical tendency to personify animals in certain contexts. Between the 12th and 18th centuries there were many cases where animals were tried for various crimes such as injuring or killing humans or spreading plague.²⁰ Although these trials revolve around criminal liability²¹, some legal historians believe that animals were given juridical personality in special situations too.²²

Recent scientific developments demonstrated that animals are sentient beings and more intelligent than what was formerly believed.²³ In light of this understanding, in many European jurisdictions including Switzerland, Germany and Austria, there is a legal trend to recognise animals as non-things and allocate a special status for their protection, a process as known as "de-reification".²⁴ Along with the impact of veganism on the political sphere²⁵, de-reification may eventually evolve in recognising ani-

¹⁴ MARTYNA ŁASZEWSKA-HELLRIEGEL, Environmental Personhood as a Tool to Protect Nature, *Philosophia*, 2023/51, 1369 et seqq., 1370, <https://doi.org/10.1007/s11406-022-00583-z>, accessed 7 January 2024.

¹⁵ New Zealand Te Urewera Act 2014; New Zealand Te Awa Tupua (Whanganui River Claims Settlement) Act 2017; ŁASZEWSKA-HELLRIEGEL (fn. 14), 1375.

¹⁶ Constitution of the Republic of Ecuador 2008 Art. 71-74, Art. 83/6, Art. 403; ŁASZEWSKA-HELLRIEGEL (fn. 14), 1374.

¹⁷ Bolivian Law 071 of the Rights of Mother Earth of 2010 and Bolivian Framework Law 300 of Mother Earth and Integral Development for Living Well of 2012; VILLAVICENCIO CALZADILLA/LOUIS J. KOTZÉ, Living in Harmony with Nature? A Critical Appraisal of the Rights of Mother Earth in Bolivia, *Transnational Environmental Law*, 2018/7, 397 et seqq., 409-410, <https://doi.org/10.1017/S2047102518000201>, accessed 7 January 2024.

¹⁸ Ohio Lake Erie Bill of Rights 2019. Note that this law was later cancelled due to being unconstitutional because there was ambiguity in defining "all possible behaviours or activities that might violate Lake Erie's right to exist, develop, and organically evolve". For the court decision, see: *Drewes Farms Partnership and State of Ohio v. City of Toledo*, Case No. 3:19-cv-434, Doc. 63 (N.D. Ohio Feb. 27, 2020).

¹⁹ GWENDOLYN J. GORDON, Environmental Personhood, *Columbia Journal of Environmental Law*, 2019/43, 49 et seqq., 54-55, <https://doi.org/10.7916/cjel.v43i1.3742>, accessed 7 January 2024; CATHERINE J. IORNS MAGALLANES, Nature as an Ancestor: Two Examples of Legal Personality for Nature in New Zealand, *Vertigo – la revue électronique en sciences de l'environnement*, 2015/10, <https://doi.org/10.4000/vertigo.16199>, accessed 7 January 2024.

²⁰ PETER DINZELBACHER, Animal Trials: A Multidisciplinary Approach, *The Journal of Interdisciplinary History*, 2002/32, 405-421, <http://www.jstor.org/stable/3656215>, accessed 7 January 2024; PETER T. LEESON, Vermin Trials, *The Journal of Law & Economics*, 2013/56, 811-836, <https://doi.org/10.1086/671480>, accessed 7 January 2024.

²¹ VAN DEN HOVEN VAN GENDEREN (fn. 10), 35.

²² For example, it was argued that *Rôles d'Oléron* (the earliest known codification of maritime rules in light of the court decisions of the island of Oleron in France, which became widely adopted throughout Northern Europe in the medieval ages) ranks animals equivalent to humans by stipulating that the goods on a grounded ship shall remain in the possession of the shipowner if a man, dog or cat survived the wreck. See: DINZELBACHER (fn. 20), 421; TIMOTHY J. RUNYAN, The Rolls of Oleron and the Admiralty Court in Fourteenth Century England, *American Journal of Legal History*, 1975/19, 95 et seqq., 101.

²³ HELEN S. PROCTOR/GEMMA CARDER/AMELIA R. CORNISH, Searching for Animal Sentience: A Systematic Review of the Scientific Literature, *Animals (Basel)*, 2013/3, 882-906, <https://doi.org/10.3390/ani3030882>, accessed 7 January 2024.

²⁴ German Civil Code § 90a; Austrian Civil Code Art. 285; Swiss Civil Code Art. 641/a; MARGOT MICHEL, Moving Away from Thinghood in Law: Animals as a New Legal Category, *Journal of Animal Law, Ethics and One Health*, 2023, 29-43, <https://doi.org/10.58590/leoh.2023.003>, accessed 7 January 2024.

²⁵ ALASDAIR COCHRANE/MARA-DARIA COJOCARU, Veganism as political solidarity: Beyond 'ethical veganism', *Journal of*

mals as legal persons with rights and interests. Today despite no longer being qualified as things, animals are not made the bearers of legal rights either.²⁶ They remain as property²⁷, meaning that while they are not considered inanimate objects, they can still be bought, sold and killed for consumption. However, there are radical approaches around the globe, for example an Indian court recently recognised all animals as legal persons.²⁸ This has been subject to criticism, especially with concerns about its economic impact on farming and it was argued that granting fundamental rights to animals for their protection would be a better approach.²⁹ Although it is controversial whether non-persons can have rights, some argue that legal capacity and bearing rights and obligations do not always overlap, thus it may be possible for animals to bear rights without personality.³⁰ In some states of the USA, animals can be the beneficiaries of trusts, which was argued to give them some type of limited capacity or even legal personality.³¹ In my opinion, this argument is speculative because pet trusts are a tool for fulfilling pet owners' wish to have their pets taken care of after their death and even if pets are assumed to be granted legal rights by becoming beneficiaries of trusts, it would not equate to legal personhood. American case law is in the same direction.³²

Social Philosophy, 2023/54, 59–76, <https://doi.org/10.1111/josp.12460>, accessed 7 January 2024.

²⁶ MICHEL (fn. 24), 31.

²⁷ TOMASZ PIETRZYKOWSKI, The Idea of Non-personal Subjects of Law, in: VISA A.J. KURKI/TOMASZ PIETRZYKOWSKI (eds.), Legal Personhood: Animals, Artificial Intelligence and the Unborn, Cham 2017, 49 et seq., 56.

²⁸ Uttarakhand High Court ruled that “*the entire animal kingdom in the state, including the avian and aquatic animals, will be treated as legal entities with distinct persona and corresponding rights, duties and liabilities of a living person*”. For the decision, see: Narayan Dutt Bhatt v. Union of India (2018 SCC OnLine Utt 645, 4 July 2018); PRANJAL PRANSHU, A Study of Animals as Legal Persons, Indraprastha Law Review, 2020/1, 1 et seq., 4.

²⁹ PRANSHU (fn. 28), 6-7.

³⁰ VISA A. J. KURKI, A Theory of Legal Personhood, Oxford 2019, 133-134 (cited as Theory of Personhood); EVA BERNET KEMPELERS, Transition Rather than Revolution: The Gradual Road towards Animal Legal Personhood through the Legislature, Transnational Environmental Law, 2022/11, 581 et seq., 589. <http://dx.doi.org/10.1017/S2047102522000139>, accessed 7 January 2024.

³¹ KURKI, Animal Rights (fn. 9), 52; DAVID FAVRE, Living Property: A New Status for Animals Within the Legal System, Marquette Law Review, 2010/93, 1021 et seq., 1038.

³² New York Court of Appeals rejected a lawsuit brought by an animal rights group on behalf of an elephant seeking relocation from a zoo by invoking a common law writ of habeas corpus to stop the illegal detainment of the elephant by ruling that animals not considered persons and thus not eligible

Today despite de-reification process, animals are not recognised as persons on a European law level.

4. Personality of AI-Systems

Although the possibility of granting personality to AI systems is a popular discussion topic today, it has also been considered extensively by philosophers and scientists in the past. Rene Descartes considered the question of whether it would be possible for machines to think.³³ Similarly, Alan Turing explored whether an AI system could be developed to the extent of sophistication where interactions with it would be indistinguishable from humans.³⁴ The scientific community predicts that strong AI systems, also known as artificial general intelligence, which can be highly intelligent and capable of demonstrating awareness could be developed in the future.³⁵ This leads to the question of whether AI systems can be granted personality.

The primary question on the personality of AI systems often revolves around the possibility of granting them natural personality, which is probably inspired by depictions of robots in science fiction movies. According to the common view, the attribution of natural personality to AI is not meaningful and morally hazardous because only humans can be subject to this type of personality.³⁶ This has been explained through the ultimate value theory, according to which humans are considered ultimately valuable and unless AI systems can ethically be considered as valuable as humans, they cannot be given fundamental protection and personality rights.³⁷ Contrary views argue that in case AI systems become fully capable of human

for habeas corpus protection, clarifying that animals are not persons. See: Nonhuman Rights Project, Inc. v. Breheny, 2022 N.Y. Slip Op. 3859 (N.Y. 2022).

³³ SOLUM (fn. 2), 1234; RENE DESCARTES, Discourse on the Method of Rightly Conducting One's Reason and Seeking Truth in the Sciences, 1637, translated by Jonathan Bennett 2017, 22-23, available at: <https://www.earlymoderntexts.com/assets/pdfs/descartes1637.pdf>, accessed 7 January 2024.

³⁴ This concept, known as the *Turing Test*, is now considered unsuitable to measure whether an AI system displays human intelligence properly. See: GRAHAM OPPY/DAVID DOWE, The Turing Test, The Stanford Encyclopedia of Philosophy, 2021, available at: <https://plato.stanford.edu/archives/win2021/entries/turing-test/>, accessed 7 January 2024.

³⁵ BEN GOERTZEL, Artificial General Intelligence: Concept, State of the Art, and Future Prospects, Journal of Artificial General Intelligence, 2014/5, 1 et seq., 41, available at: <https://doi.org/10.2478/jagi-2014-0001>, accessed 10 February 2024.

³⁶ PAWEŁ KSIĘŻAK/SYLWIA WOJTCZAK, Toward a Conceptual Network for the Private Law of Artificial Intelligence, Cham 2023, 13.

³⁷ KURKI, Theory of Personhood (fn. 30), 176.

characteristics, such as consciousness, free will, autonomy, emotions and intelligence, it may be possible to grant them natural personality.³⁸ The main problem with this approach is the difficulty of determining whether such AI systems can truly develop agency and consciousness or if they can only imitate it perfectly.³⁹ Furthermore, even in the scenario of strong AI, the human-centric approach argues against granting natural personality to these systems because giving them the same rights as humans would disregard human dignity and would not be compatible with the interests of human society, especially in terms of employment and security.⁴⁰ The concept of a robot developing consciousness, intentionality or freedom of will is highly theoretical and philosophical, therefore we cannot yet answer the question of whether AI systems can be granted natural personality, especially considering the state of today's technology where strong AI does not exist yet.⁴¹ However, the possibility of granting legal personality to AI systems, similar to institutions or other non-human entities remains relevant. Legal personality is based upon conditions set by the applicable law and does not require scientific proof on the mental state of its subject.⁴² For example, companies are not living conscious beings but artificial establishments created by a group of people for a particular purpose, such as conducting a business, yet they can be granted legal personality. In a similar sense, it can be argued that AI systems created for a specific purpose, such as automatizing tasks can be the subject of legal personality, especially for in-

creasing legal security through economic efficiency and filling the responsibility gap.⁴³

Exploring legal personality for AI, the following questions need to be considered: (i) What conditions are required to consider an entity as a legal person? (ii) What are the legal implications of acquiring legal personality? (iii) What reasons justify the mentioned conditions for legal personality to create the mentioned implications of legal personality?⁴⁴ Reflecting on these questions, legal personality is ultimately about the law allowing a certain type of entity to be recognised as a person. The conditions of legal personality may differ depending on the jurisdiction, such as meeting the required capital, drafting the articles of association and being registered in the trade registry. The results of gaining legal personality are the recognition of the entity as a separate and independent person, being attributed rights and obligations and being granted the capacity to enter into contracts, perform legal transactions and stand in court. The reasons justifying the set conditions for legal personality are public order, regulation of the market, commercial efficiency, allocation of risk and liability and legal security. In light of this, AI systems cannot fulfil the conditions for legal personality because existing rules are not applicable or suitable for them. Only technology companies developing AI can gain legal personality as corporations, whereas AI systems cannot have a separate existence and cannot be the subject of legal personality. However, it was suggested that a new type of legal personality in a similar sense to limited companies should be granted to AI systems, allowing them to have rights and obligations, including property rights and intellectual property rights as well as the obligation to comply with the law, pay tax and be held liable for any damage they cause. The next chapter will examine this concept in depth, also known as electronic personhood.

III. Electronic Personhood for AI

A. Exploring the Responsibility Gap

The most important reason behind electronic personhood for AI systems is to resolve the responsibility gap. Responsibility gap can be defined as the lack of clear accountability attributable to a particular person, as de-

³⁸ DAVID J. CALVERLEY, *Imagining a Non-Biological Machine as a Legal Person*, *AI & Society*, 2008/22, 523 et seq., 527, <https://doi.org/10.1007/s00146-007-0092-7>, accessed 7 January 2024; JONATHAN ERHARDT/MARTINO MONA, *Rechtsperson Roboter – Philosophische Grundlagen für den rechtlichen Umgang mit künstlicher Intelligenz*, in: SABINE GLESS/KURT SEELMANN (eds.), *Intelligente Agenten und das Recht*, Baden-Baden 2016, 61 et seq., 85-87; FILIPE MAIA ALEXANDRE, *The Legal Status of Artificially Intelligent Robots: Personhood, Taxation and Control*, Master's Thesis, Tilburg University, 2017, 25, <http://dx.doi.org/10.2139/ssrn.2985466>, accessed 7 January 2024.

³⁹ VAN DEN HOVEN VAN GENDEREN (fn. 10), 41; SOLUM (fn. 2), 1266.

⁴⁰ SOLUM (fn. 2), 1261.

⁴¹ SILVIA DE CONCA, *Bridging the Liability Gaps: Why AI Challenges the Existing Rules on Liability and How to Design Human-empowering Solutions*, in: BART CUSTERS/EDUARD FOSCH-VILLARONGA (eds.), *Law and Artificial Intelligence: Regulating AI and Applying AI in Legal Practice*, The Hague 2022, 239 et seq., 254.

⁴² ELIZA MIK, *AI as a Legal Person?*, in: RETO HILTY/KUNG-CHUNG LIU (eds.), *Artificial Intelligence & Intellectual Property*, New York 2021, 419 et seq., 432.

⁴³ KURKI, *Theory of Personhood* (fn. 30), 189.

⁴⁴ CLAUDIO NOVELLI/GIORGIO BONGIOVANNI/GIOVANNI SARTOR, *A Conceptual Framework for Legal Personality and its Application to AI*, *Jurisprudence*, 2022/13, 194 et seq., 204, <https://doi.org/10.1080/20403313.2021.2010936>, accessed 7 January 2024.

termining who had control over the outcomes of AI becomes more difficult with the increasing autonomy of AI-systems.⁴⁵ According to general principles of tort law, the conditions of liability are acting in fault or negligence and consequently causing damage. However, as AI systems become increasingly more autonomous, predicting potential harm and taking precautions to avoid harm, in other words defining what constitutes fault becomes harder.⁴⁶ If a person had not predicted or had no control over the harm an AI system caused, they cannot be held liable⁴⁷ unless strict liability rules apply.

Certain characteristics of AI technology, such as complexity, opacity, continuous machine learning and autonomous decision-making make it very difficult to understand how an AI system functions, sometimes even the technology developer may not exactly know why the AI generates a particular outcome, which is also known as the black box effect.⁴⁸ AI systems are often designed and developed with the collective effort of multiple researchers, engineers and programmers, in which case identifying a particular person for attributing liability becomes difficult.⁴⁹ When an AI system malfunctions, the error may be caused by faulty design or coding of the algorithm, defective sensors or other similar components, incompatible software updates, faulty or negligent human oversight, improper use of the AI program, or AI producing an undesirable outcome despite functioning as intended due to insufficient or wrong data input during training.⁵⁰ For example, in the case of a complication following a robotic surgery, it may be very difficult to identify whether the harm was caused by the malfunctioning of the AI system

or the negligence of the attending doctor.⁵¹ It would not be possible to hold the doctor liable if he adhered to all relevant medical protocols and fulfilled his duty of care. Unless the surgical robot can be proven defective or for damages outside the scope of the product liability regime, such as pure economic loss, it would also not be possible to hold the manufacturer of the AI system liable. The injured person may seek alternative options, such as filing an insurance claim or suing the hospital under vicarious liability but insurance is a personal precaution, not a legal remedy and if the doctor did not act in fault or negligence the latter would not be successful. In this case, the injured person encounters a challenging situation where they are unable to identify any responsible parties, unable to take legal action and consequently remain uncompensated. However, if legal personality is granted to AI systems, the injured party could directly seek redress from the surgical robot itself and this could serve as a potential alternative to address the responsibility gap and open the way for the liability of AI systems. It is worth noting that some authors reject the idea of the responsibility gap, because although the burden of proof requirements may be difficult to fulfil due to the complexity of AI systems, there is always someone to attribute liability to.⁵² With this in mind, in the previous example, it may be possible to hold the manufacturer liable upon technical examination if it can be proven that there was a programming error in the AI system or that the data used to train the surgical robot was of poor quality.

The concept of electronic personhood is not limited to civil liability and it was suggested that electronic persons should have rights, such as the freedom to enter into contracts and the right to own property for creating economic revenue and reimbursing potentially injured parties, thus require wallets where their assets and earnings would be deposited.⁵³ This is highly questionable since current AI systems lack intentionality which is essential to forming any type of contract and creating legal effect.⁵⁴

⁴⁵ HANNAH BLEHER/MATTHIAS BRAUN, *Diffused Responsibility: Attributions of Responsibility in the Use of AI-Driven Clinical Decision Support Systems*, *AI Ethics*, 2022/2, 747 et seqq., 750, <https://doi.org/10.1007/s43681-022-00135-x>, accessed 7 February 2024.

⁴⁶ MIRIAM BUITEN/ALEXANDRE DE STREEL/MARTIN PEITZ, *The Law and Economics of AI Liability*, *Computer Law & Security Review*, 2023/48, <https://doi.org/10.1016/j.clsr.2023.105794>, accessed 7 January 2024.

⁴⁷ GERHARD WAGNER, *Digitale Ordnungspolitik – Haftung und Verantwortung*, *List Forum für Wirtschafts- und Finanzpolitik*, 2022, <https://doi.org/10.1007/s41025-022-00237-8>, accessed 7 January 2024.

⁴⁸ CHARLOTTE A. TSCHIDER, *Beyond the Black Box*, *Denver Law Review*, 2012/98, 683 et seqq., 689-690.

⁴⁹ DE CONCA (fn. 41), 243.

⁵⁰ GERAINT HOWELLS/CHRISTIAN TWIGG-FLESNER, *Interconnectivity and Liability*, in: LARRY A. DIMATTEO, CRISTINA PONCIBÒ, MICHEL CANNARSA (eds.), *The Cambridge Handbook of Artificial Intelligence: Global Perspectives on Law and Ethics*, Cambridge 2022, 179 et seqq., 182-183.

⁵¹ KOSTINA PRIFTI/EVERT STAMHUIS/KLAUS HEINE, *Digging into the Accountability Gap: Operator's Civil Liability in Healthcare AI-systems*, in: BART CUSTERS/EDUARD FOSCH-VILLARONGA (eds.), *Law and Artificial Intelligence: Regulating AI and Applying AI in Legal Practice*, The Hague 2022, 279 et seqq., 285.

⁵² ANDREA BERTOLINI, *Artificial Intelligence and Civil Liability* (Report for the European Parliament JURI Committee, 2020), 37.

⁵³ DE CONCA (fn. 41), 253; GEORGIOS I. ZEKOS, *Economics and Law of Artificial Intelligence: Finance, Economic Impacts, Risk Management and Governance*, Cham 2021, 397.

⁵⁴ JOHN LINARELLI, *A Philosophy of Contract Law for Artificial Intelligence: Shared Intentionality*, in: MARTIN EBERS, CRIS-

In other words, today's AI systems cannot own property as they cannot enter into sales contracts due to a lack of the will to sell or purchase. Joint liability of electronic persons together with their manufacturers was suggested as a solution to incentivize technology companies to ensure high quality and compliance with the duty of care requirements during the development of AI systems.⁵⁵ However, manufacturers already have obligations to ensure product safety and are held strictly liable under the product liability regime.⁵⁶ Introducing a new legal person and still ultimately holding the pre-existing person liable would be an unnecessary complication.⁵⁷

Although the mentioned examples often revolve around the compensation of damages under tort law, granting electronic personhood to AI systems could also address gaps in other legal fields. Since generative AI systems are becoming more prevalent, intellectual property rights and copyright ownership of AI-generated content are being widely discussed.⁵⁸ If AI systems are granted personality, they could own intellectual property rights of the content they generate which includes artwork, patents, designs and other financially valuable outputs.⁵⁹ Additionally, it may enable individuals to direct their claims under GDPR⁶⁰ to the AI system itself, including the request for the erasure of personal data or withdrawal

of consent for the processing of personal data. In the case of strong AI systems with the capability of differentiating between legal and unlawful behaviours, even criminal liability may potentially be attributed to them.⁶¹

B. Arguments For and Against Granting Personality to AI

The main argument for granting legal personality to AI systems is addressing the responsibility gap as discussed in detail in the previous chapter. If AI systems are granted legal personality, it would be possible to hold them directly liable for the potential harm they may cause⁶², aiming to improve clarity and predictability in case of damage. In order to compensate liability claims, electronic persons would be able to own assets from the economic revenue they generate through their activities, for example, the profits collected through subscription fees for the services provided by the AI system. However, technology companies would most definitely want to collect profits from this revenue, which is essentially their main incentive to develop the AI system to begin with. In this situation, it is unclear to what extent the economic revenue would be shared, what percentage of the profits would go to electronic person itself, whether this would be sufficient to correspond to potential damage claims, whether there would be specific requirements for liability insurance and under what conditions the developers could be held liable for the amount exceeding the insurance payment or the assets owned by the electronic person. Additionally, it is unclear who would act as a supervisor or representative for electronic persons in order to manage their assets, possibly take on insurance policies and respond to damage claims. Allocating legal personality to AI systems may appear to address the responsibility gap at first, but also poses many new questions. There are alternative ways to address the responsibility gap without allocating electronic personhood to AI systems.⁶³ Advancements in science, such as explainable AI technology which aims to offset the black-box effect by providing clear explanations of the decision-making process of AI could increase accountability by making it possible to pinpoint malfunctions in

TINA PONCIBÒ/MIMI ZOU (eds.), *Contracting and Contract Law in the Age of Artificial Intelligence*, Oxford 2022, 59 et seqq., 75.

⁵⁵ DE CONCA (fn. 41), 253.

⁵⁶ Council Directive 85/374/EEC of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products (Product Liability Directive) is in force in all EU Member States. Non-EU countries such as Switzerland also adopted parallel rules, see: Swiss Product Liability Act 1994.

⁵⁷ JEAN-SÉBASTIEN BORGHETTI, How can Artificial Intelligence be Defective?, in: SEBASTIAN LOHSSE/REINER SCHULZE/DIRK STAUDENMAYER (eds.), *Liability for Artificial Intelligence and the Internet of Things*, Baden-Baden 2019, 63 et seqq., 73.

⁵⁸ For example, a recent judgement by the Supreme Court of the United Kingdom found that an AI system could not be granted patents for two inventions it created, as only natural persons can be recognised as inventors according to the law. See: *Thaler v Comptroller-General of Patents, Designs and Trade Marks* [2023] UKSC 49.

⁵⁹ JAN SMITS/TIJN BORGHUIS, *Generative AI and Intellectual Property Rights*, in: BART CUSTERS/EDUARD FOSCH-VIL-LARONGA (eds.), *Law and Artificial Intelligence: Regulating AI and Applying AI in Legal Practice*, The Hague 2022, 323 et seqq., 332.

⁶⁰ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

⁶¹ CHESTERMAN (fn. 13), 828.

⁶² PIETRZYKOWSKI (fn. 27), 64.

⁶³ European Commission, Directorate-General for Justice and Consumers, *Liability for Artificial Intelligence and Other Emerging Digital Technologies*, Publications Office, 2019, 38, <https://data.europa.eu/doi/10.2838/573689>, accessed 7 January 2024; MARK A. GEISTFELD et al. (eds.), *Civil Liability for Artificial Intelligence and Software*, Berlin/Boston 2023, 321 et seqq., 361.

complex AI systems.⁶⁴ Moreover, adapting existing liability rules to address the legal questions emerging from the increasing autonomy of AI systems could be a better starting point than granting legal personality to AI.⁶⁵ For example, EU is in the process of extending the strict product liability regime to cover legal remedies for people who suffer AI-related harm.

Another argument for granting legal personality to AI systems stems from a futuristic view, according to which considering AI systems that could be developed to the level of being comparable to human minds as simple machines is not in line with modern science⁶⁶ and it is necessary to be more open-minded and accepting that technological advancements require legal and societal changes. However, acting on the assumption that strong AI systems may be developed in the future is not sufficient to justify granting legal personality to AI at the current stage. Other arguments supporting electronic personhood include encouraging technological innovation⁶⁷ and increasing transparency by introducing requirements for registration and disclosure of parties profiting from AI systems,⁶⁸ both possible without granting legal personality to AI systems.

The prevalent view seems to be against granting legal personality to AI and many scholars explicitly reject the idea of electronic personhood.⁶⁹ Firstly, there is a significant distrust in AI technology.⁷⁰ AI is thought to pose great risks to humanity through surveillance, profiling, manipulation of human will, causing job losses⁷¹, automation of important decisions on health and well-being and breaching human rights including the right to pri-

vacy.⁷² In light of this understanding, electronic personhood has been criticised because it may be dangerous for human interests. Secondly, there is no need to attribute legal personality to AI systems in order to resolve the responsibility gap, because the liability issues could be addressed through existing laws, such as extending the product liability regime. Even in cases where existing laws remain insufficient, introducing new laws could be a better solution than establishing a completely new category of legal personality, which could lead to other ethical issues.⁷³ Thirdly, granting legal personality to AI systems may lead to adverse economic outcomes in the society, especially because it could be used to externalise risks and evade liability.⁷⁴ The economic risk of liability, in other words the risk of paying compensation increases the incentive for the market actors, such as technology developers to comply with safety standards.⁷⁵ If electronic personhood is granted to AI, the risks of potential claims, the costs of additional safety precautions and the costs of liability insurance may be transferred from technology companies to AI systems. In these cases, the joint liability of the parent company⁷⁶ or an equivalent concept of piercing the corporate veil⁷⁷ was suggested to address the technology developer behind the electronic person as an additional liable party. However, this is not meaningful

⁶⁴ For a contrary opinion, see: FILIPPO SANTONI DE SIO/GIULIO MECACCI, *Four Responsibility Gaps with Artificial Intelligence: Why They Matter and How to Address Them*, *Philosophy & Technology*, 2021/34, 1057 et seqq., 1072-1073.

⁶⁵ NOVELLI et al. (fn. 44), 198.

⁶⁶ ERDEM DOGAN, *Yapay Zekânın Hukukî Statüsü ve Hukukî Sorumluluğu*, PhD Thesis, Ankara University 2022, 271.

⁶⁷ KSIĘŻAK/WOJTCZAK (fn. 36), 32.

⁶⁸ BERTOLINI (fn. 52), 39-40.

⁶⁹ SEBASTIAN LOHSSE/REINER SCHULZE/DIRK STAUDENMAYER, *Smart Products- A Focal Point for Legal Developments in the Digital Economy*, in: SEBASTIAN LOHSSE/REINER SCHULZE/DIRK STAUDENMAYER (eds.), *Smart Products*, Baden-Baden 2022, 11 et seqq., 38; BARIS SOYER/ANDREW TETTENBORN, *Artificial Intelligence and Civil Liability- Do We Need a New Regime?*, *International Journal of Law and Information Technology*, 2022/30, 385 et seqq., 390, <https://doi.org/10.1093/ijlit/eaad0016>, accessed 7 January 2024.

⁷⁰ MARK KINGWELL, *Are Sentient AIs Persons?*, in: MARKUS D. DUBBER/FRANK PASQUALE/SUNIT DAS (eds.), *The Oxford Handbook of Ethics of AI*, Oxford 2020, 325 et seqq., 335; VAN DEN HOVEN VAN GENDEREN (fn. 10), 16.

⁷¹ ALEXANDRE (fn. 38), 35.

⁷² In the face of risks posed by AI, Future of Life Institute published an open letter to policymakers for pausing powerful AI experiments for at least six months and emphasised the urgent need for regulation. See: *Pause Giant AI Experiments: An Open Letter*, <https://futureoflife.org/open-letter/pause-giant-ai-experiments/>, accessed on 7 January 2024.

⁷³ European Commission, Directorate-General for Justice and Consumers, *Liability for Artificial Intelligence and Other Emerging Digital Technologies*, Publications Office, 2019, 38, <https://data.europa.eu/doi/10.2838/573689>, accessed 7 January 2024.

⁷⁴ GERHARD WAGNER, *Liability Rules for the Digital Age- Aiming for the Brussels Effect*, *Journal of European Tort Law*, 2022/13, 191 et seqq., 195-196; GERHARD WAGNER, *Robot Liability*, in: SEBASTIAN LOHSSE/REINER SCHULZE/DIRK STAUDENMAYER (eds.), *Liability for Artificial Intelligence and the Internet of Things*, Baden-Baden 2019, 27 et seqq., 56-57; *Opinion of the European Economic and Social Committee on Artificial intelligence – The consequences of artificial intelligence on the (digital) single market, production, consumption, employment and society*, dated 31.05.2017, INT/806-EESC-2016-01-01-05369-00-00-AC-TRA, §3.33.

⁷⁵ SCHOLLAERT (fn. 10), 403-404.

⁷⁶ DE CONCA (fn. 41), 243.

⁷⁷ BERNHARD A. KOCH, *Product Liability 2.0 – Mere Update or New Version?*, in: SEBASTIAN LOHSSE/REINER SCHULZE/DIRK STAUDENMAYER (eds.), *Liability for Artificial Intelligence and the Internet of Things*, Baden-Baden 2019, 99 et seqq., 115; CHESTERMAN (fn. 13), 826.

because there is no need to grant legal personality to AI systems if their producers would be held liable at the end.

Elaborating further on the issue of liability in one where the person or company who developed the AI system would be fully liable of all damages caused by AI system under the product liability regime, and in the other where the AI system itself has a separate legal personality and liability of the damages it causes. In the first scenario, any claims of damage caused by the defects in the AI system could be directed to the developer. This is more preferable from the injured parties' perspective, as the producer of the AI system would have strict liability and there would be no need for proving his fault or negligence. In the second scenario, claims of damage must be addressed to the AI system itself under general principles of tort law. In this case, the injured parties also bear the burden of proving the fault or negligence of the electronic person, which results in a whole new discussion on how to judge the misconduct of AI systems. Another important issue is the limitation of liability: Holding technology developers liable would give a greater chance of receiving compensation for injured parties than directing their claims against AI systems, as the liability of electronic persons would be limited with their economic revenue, which could be much lower than the 70.000.000 EUR limit of the producer's liability under the current Product Liability Directive.⁷⁸ Even if electronic persons take on liability insurance, any claim exceeding this amount may not be recovered, consequently causing the injured persons to sue the developers behind the electronic persons, which may lead to further disputes.⁷⁹ Therefore, introducing stricter safety requirements and extending existing liability rules to cover AI-related damage could be a better option than granting personality to AI systems for ensuring fair compensation and remedying the victims.

C. Electronic Personhood vs. Personality of Non-Humans

Legal personality for non-humans, such as corporations, elements of nature and animals were discussed in the previous chapter. In light of this, personality of non-humans and electronic personhood could be compared. Starting with the personality of institutions, it is the most simi-

lar type of personality to electronic personhood. In both cases, the corporation or AI system would have a set of rights and obligations mostly economic, such as right to own property, civil liability from damages, freedom to enter into contracts and sue and be sued in court. As mentioned in the first chapter, there are practical reasons to attribute legal personality to institutions, such as commercial efficiency, enabling direct interaction with the institution instead of shareholders in case of legal claims and increasing legal security and trust in the market. Some of these, such as the ability to directly address the AI system for compensation claims may appear relevant to electronic personhood, however the risks of granting personality to AI (including the evasion of liability by technology companies and failure to compensate victims fully) outweigh the benefits, thus not granting legal personality to AI would be better for legal security. Furthermore, corporations have long been part of our legal system and society, but regulating the new AI technology requires a careful consideration before appealing to radical solutions such as creating a completely new category of legal persons.

Continuing with environmental personality, AI systems do not need protection like the environment, thus giving them a separate personality and rights is not necessary. Environmental personality may balance the full authority of governments over nature, allowing private law provisions to become applicable as opposed to administrative environmental law alone. This could enable non-governmental organizations and residents to take legal action against dangerous or pollutive activities such as gold mining and possibly act as a tool to combat corruption linked to inaccurate environmental impact reports or improper licensing for processing natural resources. This is not applicable in the case of AI. Although natural elements can be recognised as separate entities with certain rights such as being protected and preserved, obligations or liability cannot be allocated to them. For example, in the case where a river overflows due to heavy rain, consequently damaging houses nearby, the river cannot be sued for compensation for the harm it caused. In contrast, the essential argument for granting legal personality to AI systems is to hold them liable in case of damage. Therefore, it is not possible to make an analogy between environmental personality and personality for AI systems.

Lastly, if we assume that animals can be granted a passive legal personality where they would have certain fundamental rights for their protection but no duties or obligations, how would this type of personality compare to the personality of AI systems? Firstly, animals are living, sentient beings with the ability to feel emotions and pain, but AI systems -despite being able to demonstrate some

⁷⁸ Product Liability Directive Art. 16.

⁷⁹ ATILLA KASAP, Güncel Gelişmeler Işığında Türk Hukukunda Yapay Zekâ Varlıkları Ve Hukuki Kişilik, *Türk-Alman Üniversitesi Hukuk Fakültesi Dergisi*, 2022/4(2), 485 et seqq., 536, <https://dergipark.org.tr/tr/pub/tauhfd/issue/74706/1227292>, accessed 30 March 2024.

sort of intelligence at completing tasks- are not living creatures and do not need special protection or be granted fundamental rights such as the right to live. Secondly, animal behaviours are based on instincts and they are not able to differentiate between right and wrong, but highly advanced AI systems may be able to understand which behaviours are illegal or potentially harmful to others and calculate the risks of their actions. Therefore, they may be held liable for their actions if they develop a sufficient level of intelligence and autonomy. Finally, passive legal personality, in other words being granted rights but no obligations or liability, is not capable of corresponding to the essential objective of potentially granting legal personality to AI, which is to address the responsibility gap. Thus, even if animals are granted a protective legal personality, it would not be comparable to electronic personhood.

D. Regulatory Stance of the European Union

Legal personality for AI has been discussed extensively in the European Union. First in 2017 European Commission Report Resolution on Civil Law Rules on Robotics considered the concept of allocating electronic personhood to advanced robots so that they can be held liable for the damage they cause to others,⁸⁰ which was heavily criticised.⁸¹ In 2019 the Report on Liability for Artificial Intelligence and Other Emerging Digital Technologies concluded that there was no need to give legal personality to emerging technologies including AI.⁸² The following resolutions did not further consider electronic personhood.⁸³ The main reason for not considering electronic personality was the decision that the risks of AI should be managed with adapting the existing rules and introducing additional control mechanisms instead of assigning

a completely new type of personality which could bring further complications, especially with regards to human rights. Another important reason is procedural, as the competence to decide on legal personality rests within the national jurisdictions of Member States.⁸⁴

Currently, there are three main legislative proposals, namely the AI Act⁸⁵, Revised Product Liability Directive⁸⁶ and AI Liability Directive⁸⁷ aiming to regulate AI within the European Union. These three proposals complement each other and aim to address the responsibility gap by minimising risks of AI and extending the current liability rules to correspond to potential harm. None of these proposals suggest legal personality for AI systems, on the contrary the Revised PLD explicitly recognises AI systems as products and makes it possible to attribute AI-related harm to all economic actors who play a role in circulating the AI product, including manufacturers, importers, distributors and online trade facilitators. To conclude, granting legal personality for AI systems is not currently on the agenda in the near future, at least on the European law level. Nevertheless, as technology advances, there may come a time when the existing rules remain incapable of dealing with the challenges of AI, especially if strong AI systems emerge and then the idea of electronic personhood may be revisited.

IV. Conclusion

The question of whether AI systems can be granted legal personality is an active discussion topic, with no right or wrong answer. Today highly advanced AI systems are already being used, which will likely continue in the future. The potential risk of AI systems are also evident, for example, drone accidents may cause injuries or the use of deepfake technology may cause a breach of personality rights. The black box effect and increasing autonomy of AI systems pose obstacles to accessing legal remedies and lead to a responsibility gap. One way to respond to the technological revolution is granting AI systems legal personality similar to the personality of non-human entities, especially corporations. In my opinion, electronic person-

⁸⁰ Resolution (EP) Civil Law Rules on Robotics, 16 Feb. 2017, 2015/2103(INL), Art. 59/f.

⁸¹ Many AI experts, political leaders and researchers from legal, technical, ethical and health backgrounds published an open letter to the European Commission, discouraging the idea of granting electronic personhood to AI systems and robots, see: <http://robotics-openletter.eu/>, accessed 7 January 2024.

⁸² European Commission, Directorate-General for Justice and Consumers, Liability for Artificial Intelligence and Other Emerging Digital Technologies, Publications Office, 2019, 37-38, <https://data.europa.eu/doi/10.2838/573689>, accessed 7 January 2024.

⁸³ SCHOLLAERT (fn. 10), 390; Resolution (EP) Civil liability regime for artificial intelligence, 20 Oct. 2020, 2020/2014 (INL); Resolution (EP) Framework of ethical aspects of artificial intelligence, robotics and related technologies, 20 Oct. 2020, 2020/2012 (INL).

⁸⁴ NOVELLI et al. (fn. 44), 198.

⁸⁵ Proposal for a Regulation of The European Parliament and of the Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts COM/2021/206.

⁸⁶ Proposal for a Directive of the European Parliament and of the Council on Liability for Defective Products COM/2022/495.

⁸⁷ Proposal for a Directive on Adapting Non-Contractual Civil Liability Rules to Artificial Intelligence COM/2022/496.

hood should not be granted to AI systems because (i) big technology companies could potentially evade liability by transferring the risks and responsibility to AI systems, causing the incentive in the market to comply with safety standards and deterrence mechanisms to be weakened, (ii) damage claims of injured parties may not be fulfilled as the liability of AI would be limited with the revenue generated by the AI system or the value of the AI system itself and (iii) in the current state of technology, strong AI systems have not yet been developed and responsibility gap can be addressed in other ways, thus there is no reason to attribute legal personality to existing AI systems. However, as technology continues to develop further, the discussion on legal personality for AI will continue to be under the spotlight and perhaps, there will come a time when legal personality may be granted to AI systems.

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