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Robot as a Legal Entity, Legal Dream or Nightmare?

Robots are coming! If our society will benefit from this new era we have to look if it is possible to give a certain legal personhood to robots because will perform tasks in this society with legal effects. Therefore it is necessary to compare the role of robots with existing legal persons and see how we can create legal trust and confidence and to accept that autonomous intelligent artificial beings can play a role in the coming age of robotism.

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1. Introduction

[Rz 1] *The end of humanity is the beginning of a robot society. Even if a quart of humanity survives mass destruction, robots will take over the human parasite.*[1]

[Rz 2] This is a logical consequence from the evolution theory of Darwin, survival of the fittest. Or is it? Do we need to bother about legal consequences of the coming robotica revolution or shall we just enjoy the time left for us humans before we are extinct?

[Rz 3] I doubt that humanity will be that careless and naïve, although there are some clear alarming examples about humanitie's stupidity not to care about the earth's future, we still have ample opportunity to arrange for the integration of robotics in our future society in a way that will be beneficial to humanity and the earth.

[Rz 4] The law has been developed by humans, for humans and initially between natural persons. But many things have changed during the development of the law in the long journey from the Roman legal system to our modern legal system.

[Rz 5] Individuals are not the only players in the legal system today. Large and small businesses, organizations and government organizations are entitled to carry out all kinds of acts as a legal entity and can be held responsible for the things they do. Technological development goes in the direction of artificial intelligence entities that can perform tasks, «coupled with the exponentially expanded Internet also been described as» the Internet of robotic things.[2]

[Rz 6] As Erik Tjong Tjin Tai, in his contribution to the preliminary reports of the Netherlands Association of Jurists (NJV) stated: «If the facts too long deviate from the legal status and the right is unsustainable, the law must ultimately yield to the actual situation.»[3] The question that follows, is a robotized society benefits from – a certain degree of – legal personality of robots or do we wait until the shore of the robotized society will turn the legal ship?

[Rz 7] The consideration if such an autonomously functioning artificial intelligent entity or robot must have a secure legal subjectivity will be dependent on the actual social necessity. In other

1 J. Lehman/R. Miikkulainen, Extinction Events Can Accelerate Evolution, St. Mary's University, Canada, 2015 (http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0132886 [all Internetsources accessed on 13 February 2017]).

2 R. van Est/L. Kool, Werken aan de robotsamenleving, Rathenau Instituut, Den Haag 2015 (https://www.rathenau.nl/nl/publicatie/werken-aan-de-robotsamenleving), p. 16.

3 TFE/E. Tjong Tjin Tai, Private Law for Homo digitalis, use and maintenance, preliminary advice for NVJ, 2016, p. 248.

words, can a society function in the future without any form of legal personality for autonomous artificially intelligent entities?

[Rz 8] It is important to consider what elements are characteristic of the current players with legal personality and legal capacity, and which will be desirable to give the robot that (degree) of legal personality that is considered useful in society. Taking into consideration that this robot is an advanced operating system where human control is barely noticeable or even absent.

[Rz 9] How do we deal with an administration which takes decisions on the basis of analyses obtained from globally available data without any human control or decision-making?

[Rz 10] How do we qualify the behaviour and actions of drones that carry out tasks according to their own intelligence? The algorithms are developed by people but are adjusted by the drones themselves. Medical robots will decide on their own analysis to perform an operation without the involvement of individuals.

[Rz 11] Are these robots responsible and accountable for their actions and more importantly their mistakes? Is the man behind the screen always the responsible party, even though he is not behind the screen? What place will the robot and humanoid have in a robotized society?

[Rz 12] Does it remain a legal object or should there be a sui generis legal person added to the persons that now exist in our legal framework. Already cautious proposals are done to comply to the future to find legal solutions.[4]

[Rz 13] There will be a clear difference of autonomy coupled to a certain legal personality based on the social need to have robots perform tasks as autonomous acts.

[Rz 14] With respect to their legal position there is an obvious difference between instrumental robots in the industrial sector that follow instructions of individuals or even other robots and independently operating robots as robots in surveillance, social support, healthcare and medical sector, which will operate at their own discretion without human instruction or supervision.

[Rz 15] In a transition to the integration of robots in a society environment, legal solutions will be based on the desirability and legitimacy of the use of robots. May robots also be controlled by another robot or will there always be natural person supervision? The answer to these questions is dynamic as the number of applications of robots in everyday life of consumers increases exponentially as the development of this «robot technology». Examples include the 3D printer for more and more products, self-propelled cars, the ever developed prosthesis for the human body, limbs and organs, exo-skeletons and autonomous social robots. This article gives an opening to this discussion which still has to go a long way.

2. Robot

[Rz 16] A robot is nothing else than an AI system that is different in form and function, and will be continuously developing. The first references to robots were mainly given to the anthropomor-

4 Whereas, Ultimately, robots autonomy raises the question of heir naturally in the light of the Existing legal categories and whether they should be regarded as natural persons, legal persons, animals or objects or Whether a new category shouldering be created, with its own specific features and Implications as regards the attribution of rights and duties, as liability for damage [...]. Committee on Legal Affairs/M. Delvaux, Draft report made for the European Parliament. DRAFT REPORT with recommendations to the Commission on Civil Law Rules on Robotics (2015/2103 (INL)), 31 May 2016, p. 5

phic appearance, the human-like robot. Originally the term robot in a play by the Czech writer Karel apek, suggested by his brother Joseph, in his play, RUR, or Rossum's Universal Robots.[5] The word «robot» comes from an old church Slavonic word «Robota» for «slavery», «forced labour» or «monotonous work». Robotics is a collective name – loosely translated – refers to automate labour-intensive processes and the replacement of the human component in an action by a robot. This automation has been around since the industrial revolution, a widely used technique in the production. Usually, the robot performs a number of tasks to be carried out so far by an individual, instructed by human programmers.

[Rz 17] The EU report «RoboLaw» describes to some extent the ethical, practical and legal questions that arise in the application of robot technology.[6]

[Rz 18] The European definition of robot in this report is based on the definition of automated system but supplements this definition by distinguishing physical characteristics, technical components and skills. A robot can be described in this way if:

> «*Autonomous machine that has physical similarities with humans, consists of sensors, power and control; and to able to interact with the environment or people autonomously to carry out certain tasks.*»[7]

[Rz 19] This definition seems to be derived from an archaic «science fiction» anthropomorphic image that robots should look like people. More realistic is to connect with the broader definition of «robot park»[8]:

> «*A robot is a mechanical or virtual artificial agent (called Bot), usually an electro-mechanical machine that is guided by a computer program or electronic circuitry. Robots can be autonomous, semi-autonomous or remotely controlled and range from humanoids as ASIMO and Topio to nanorobots, swarm robots and industrial robots. A robot may convey a sense of intelligence or thought of its own.*»

[Rz 20] Reference is already made to intelligence on an autonomous basis. The problem here is as well that there will be a multitude of applications that can fall under this definition but this definition on the other hand is too small to include all robotics. The question remains as to whether a robot is to be considered as a system, a unique entity or species. For the legal specification, as long as the robot is not an autonomous functioning system, the question of legal personality is not relevant. It is a product for which the controlling entity is responsible.

[Rz 21] The robot can be considered as a dynamic evolving concept that started as a machine and is constantly evolving into a complex autonomous functioning robot and – in later stage – humanoïde system. The nature of this entity, electronic, or organic-chemical is less relevant. The state of intelligent autonomy will be relevant for its legal status.

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5 In the final act of the play the robots revolt against their human creators. After killing most of the people on the planet, the robots realize they need people because they can only find out from them how robots are manufactured. This secret dies with the last man. In the final scene, there is a deus ex machina moment when two robots acquire human qualities of love and compassion and the sunset meet to create a new world. (http://www.sciencefriday.com/segment/04/22/2011/science-diction-the-origin-of-the-word-robot.html).

6 See European Research, Regulating Emerging Robotic Technologies in Europe: facing Robotics Law and Ethics (www.robolaw.eu).

7 Europe, Guidelines for regulating Robotics (http://www.robolaw.eu).

8 http://blog.robotpark.com/what-is-a-robot-51001/.

[Rz 22] In the report of EU MP Mady Delvaux, meant to result in an accepted motion of the EP, the sense of any life form within the robot (humanoid) is excluded. Although this still is the case at this moment I would not exclude that on beforehand.[9]

[Rz 23] One in this light, primitive but topical example of this development is the «intelligent» car. According to the road traffic law the driver is the responsible party. But how to justify it when the driver has no control of the car anymore but the car depends on numerous providers of information? These providers are infrastructure, road managers other motorists, the producer, the meteorological department, the designer of the algorithm at the heart of the learning vehicle and third party data providers that control or affect navigation and engine control. But what if a direct link between the brain activity of the «driver» and the software control is made? Not so futuristic, there are already cars that respond to drivers who threaten to fall asleep where certain movements betray a delay in reflexes. Going one step further those links are analysed in an external autonomous system that will control the traffic flow.[10]

[Rz 24] Another example is an application robot that is used in the selection of candidates. Beyond the algorithmic selection of candidates based on their email or letter also a robot can be used during a conversation watching posture, eye movements, sweating, tuning stability and other mental and physical reactions. This analytical achievement will be developed even to a greater extent in the «care-industry» where autonomously functioning robots will apply client custom made solutions to the needy without the need for guidance from outside.

[Rz 25] To determine the legal classification of the robot as a simple tool, a legal object that is used as an instrument or as an autonomous robot that will operate independently. Whether robots should be compared to legal persons or legal objects is to be answered for a great deal on the basis of function and autonomy.[11] This determines whether they are assessed as thing, as minor, non-subordinate, movable property, animals, or as an independent legal entity.[12]

[Rz 26] A complicating factor is that it is not so easy to tie to a breakdown of legal persons and legal objects.

3. The Physical Person

[Rz 27] To identify which aspects of legal personality might apply to robots it is helpful to give an explanation of the relevant characteristics of natural and an unnatural legal persons. Legally, the individual as a natural person is the bearer of rights and obligations linked to the fact that it concerns a living person and not a fictional entity here. A definition of the actual natural person is

9 The Robot will have: the acquisition of autonomy through sensors and/or by exchanging data with its environment (inter-connectivity) and the trading and analysing of those data; self-learning from experience and by interaction (optional criterion); at least a minor physical support; the adaptation of its behaviour and actions to the environment; absence of life in the biological sense. Committee on Legal Affairs/M. Delvaux, Report with recommendations to the Commission on Civil Law Rules on Robotics (2015/2103(INL)), 27 January 2017.

10 See: https://youtube/pyphUsEmoak.

11 See: R. Van Den Hoven Van Genderen, Robot Law, a Necessity or Legal Science Fiction? (p. 170); Machine Medical Ethics and What About the Law? (pp. 167 ff.), in: Simon Peter van Rysewyk/Matthijs Pontier (eds.), Springer, Machine Medical Ethics, Springer International Publishing, 2014.

12 E. Schaerer/R. Kelley/M. Nicolescu, Robots as Animals: A Framework for Liability and Responsibility in Human-Robot Interaction, in: Robot and Human Interaction Communication – 18th IEEE International Symposium, 2009, pp. 72–77.

not present in the Dutch civil law. In German law the natural person is defined as «jeder lebende Mensch» and is automatically legally competent: «Die Rechtsfähigkeit des Menschen beginnt mit der Vollendung der Geburt».

[Rz 28] However, there is some agreement on what is characteristic of the individual: one is equal in the physical sense but in a legal sense,[13] a man of flesh and blood in a legal sense the bearer of rights and obligations. The law regulates who is Dutch, German, Austrian or Chinese, that every living human being is the bearer of rights and obligations but not always what is a natural person.[14]

[Rz 29] Another feature of the natural person is found in the spiritual aspect of the natural person. From the religious fiction hereby often is referred to the presence of the soul. Artificial legal persons and objects do not have a soul, whatever that may be. According to the Catechism of the Catholic Church, which still can be seen as the expert in this field, the words «soul» is defined as follows: «soul» means the spiritual principle in man. The soul is the subject of human consciousness and freedom.

[Rz 30] The freedom of decision is the ethical and legal background of the responsibility we have as natural beings. Individuals are sovereign in their decisions and therefore legally responsible for their actions.

[Rz 31] An individual will always be a legal entity with legal personality but a legal entity, an artificial entity will not have the same rights as a natural person. The legal entity, being a natural person, the subject of rights and duties can act with legal implications.

4. The Natural and Human Behaviour, Determines Legal Personality?

[Rz 32] In the film «bi-centennial man « based upon a book by Isaac Asimov[15] the robot Andrew Martin wants to be recognized as a natural person. Initially his request is rejected by the President of the Court because a robot cannot be recognized as a natural person. The consideration bearing this rejection is that a robot lives forever and cannot die. The robot requires years later a revision of this judgment because the robot is adapted so that he can die.

> «*Andrew Martin: In a sense I have. I am growing old, my body is deteriorating, and like all of you, intending eventually cease to function. As a robot, I could have lived forever. But I tell you all today, I would rather to a man, than live for all eternity a machine.*»

13 R. Van Hoven Van Genderen/E. Van Duin , «.... and deserves its own rights», NRC, 20 December 2014. See also H. Der Pluijm, Rights and Obligations for Robots, PC Active, 2013.

14 The Principles of European Tort Law («PETL «) refers to liability for «auxiliaries» (6: 102) – an apt term for robots as for us, though still below the PETL particularly thought of people. Article 3: 201 of the Draft Common Frame of Reference (DCFR) of the Principles, Definitions and Model Rules of European Private Law refers to workers or «similarly engaged» others, in which the phrase «similarly engages another» clues may contain cases of accidental damage, see: P. Giliker, Vicarious Liability or Liability for the Acts of Others in Tort: A Comparative Perspective, in: Journal of European Tort Law (JETL), 1/2011, pp. 38 ff. Then the robot will have to be seen as «another», where the employer is liable under the condition that he still has « the least abstract Possibility of directing and supervising their conduct through binding instructions» (C. von Bar/E. Clive [eds.], Principles, Definitions and Model Rules of European Private Law: Draft Common Frame of Reference, pp. 34–55).

15 I. Asimov, The Bicentennial Man and Other Stories, 1972, and later edited by Asimov as The Positronic Man (1993), co-written with Robert Silverberg, ultimately raises formed the basis for the script of the movie Bicentennial Man, 1999 starring Robin Williams.

[Rz 33] Another consideration that is used to obtain the qualification natural person is the existence of free will:

> «*It has been said in this courtroom that only a human being can be free. It seems to me that only someone who wishes for freedom can be free. I wish for freedom.*»

[Rz 34] The idea qualifying an autonomous thinking and self- decisive robot as individual based on the autonomy and free will is a fairly extensive and certainly not watertight argument. Free will, as indicated by Descartes is based on the fact that we as human beings have the experience by which free will steer our behaviour. Aristotle had the conviction that this free will also exist in animals.[16] Contrary to Jhering who had a different view and assumed that only natural persons would have legal rights:

> «*No intuition of things intellectual but only a symbolic [discursive] knowledge of them is given to man. Intellection is possible to us only through universal concepts in the abstract, not through a singular concept in the concrete. For all our intuition is bound to a certain formal principle . . . this formal principle of our intuition (space and time) is the condition under which anything can be an object of our senses, and being thus the condition of sensitive knowledge it is not a means to intellectual intuition. Further, all the matter of our knowledge is given by the senses alone, whereas a noumenon, as such, is not to be conceived through representations derived from sensations. Consequently, a concept of the intelligible as such is devoid of all that is given by human intuition. (2:396)*»

[Rz 35] The same applies to intelligence. Without going into the attitudes that exist about the many forms of intelligence, I would limit this reference to the intelligence needed to participate as individual in society. To this end it is necessary that there is understanding of the consequences of acts done in this social traffic (with legal effect). Virtually every robot will be capable, now or in the near future, to meet the Turing test, the qualification for intelligence on «human» level.[17]

[Rz 36] Although Descartes was able to claim that animals are mere machines due to their lack of cognitive abilities, the discussion above indicated that this vision is slightly impaired. Animals are not things, therefore provisions, with respect to issues on animals apply, in compliance with the laws regulations and rules of unwritten law, reasonable restrictions, obligations and principles of law and public order and decency.[18] Although animals still have no rights, they will be treated on the basis of their role in society, yet with certain rights based on the obligations of natural persons in society. Abuse or neglect of animals will not be accepted and rules as such are also included in the Criminal Codes and certain rights for animals, in the Netherlands since 2011 in the «the law on animals.» This animal has no legal personality but there is a societal tendency to have more rights applicable to animals.

[Rz 37] The question is whether in respect of certain social robots as pets, companion robots and sexrobots the same regime should apply.[19] Yet there are also voices to provide animals with some form of legal personality.[20]

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16 Descartes, Principia Philosophiae, 1973. Jhering had a different view.

17 The Turing Test Proposed by Alan Turing (1950), was designed to providence a satisfactory operational definition of intelligence. Turing defined intelligent behaviour as the ability to achieve human-level performance in all cognitive tasks, sufficient is to fool an interrogator.

18 http://www.dierenrecht.nl/standpunten/rechten-voor-dieren.

19 Eq. by Kate Darling opinions in: Electronic Love, Trust, & Abuse: Social Aspects of Robotics, Miami, 1 April 2016.

20 In the Austrian case, the «surprising cognitive abilities» of the chimpanzee were named as the ultimate decisive argument to categorize Hiasl under the applicable law as a person or to grant him at least by analogy basic rights.

5. Artificial Legal Persons

[Rz 38] The society has shown that, in addition to the persons of natural and human origin, that there is a need for other legal persons, entities from a social, administrative or economic nature as regulated in different civil codes. The non-natural person may be a company or other entity as organization or institution, foundation etc.

[Rz 39] In the ancient Egyptian society it was common to use the legal structure of a foundation to maintain temples. In Roman civilization, there were several legal entities, the Universitates personarum similar to corporations or government colleges with their own identity and legal personality.

[Rz 40] A well-known Dutch international organization with legal personality, the first multinational corporation, was the Dutch East India Company (VOC), founded in 1602. A clear example of adapting to the legal reality of the social and economic needs of all times.

[Rz 41] A legal person is, concerning property, equal to the position of individuals, natural persons, unless otherwise provided by law.[21] A legal person is, in a similar way as an individual, a legal entity to participate in socially relevant legal relationships. A legal person can go to court if its interests are affected or be sued in the courts if it acted unlawfully in view of another legal or natural person.

[Rz 42] As John Dewey indicated already in the Yale Law Journal in 1926: «The Corporation is a right-and-duty-bearing entity.»[22] And, as stated, are not equal to humans, they have a legal personality to act in legal sense. Although it is a legal fiction, granted to organizations and other entities they can only act in a legal manner that is in the best interest and the purpose of this legal entity. There is a global spectrum of legal persons in civil law. In the United States, this means even to some extent the application of the Bill of Rights guarantees to corporations. Carl Mayer describes this situation in the United States on the basis of the development of equal treatment under the fourteenth amendment.[23] Companies are considered persons for the purpose of fourteenth amendment, i.e. should have the right to equal protection and due process.

6. Different Legal Persons Accepted in Society

[Rz 43] Non-natural persons do not all have the same legal powers and responsibilities. Here, too, purpose and function is the determining factor. The main differences between individuals and non-natural persons may also be the object of a legal act; artificial legal persons can be sold, terminated or spliced in a legal sense. This will also be an aspect, at least in the current system where to the robot or an AI system will be subjected. In particular, the supervisory aspect to legal and board of directors or shareholders is interesting for monitoring any legal personality of robots.

[Rz 44] The individual as a natural person cannot be terminated in a legal manner, although it is also a fact that their legal lives end by their physical termination by death or euthanasia

21 Book 3: Article 5 of the Dutch Civil Code.

22 J. Dewey, the Historic Background Of Corporate Legal Personality, Yale Law Journal, April 1926, p. 26.

23 C.J. Mayer, Personalizing the Impersonal: Corporations and the Bill of Rights, Hastings Law Journal, March 1990, Volume 41, No. 3.

and may be withdrawn of some of their rights by imprisonment or by curatorship. Individuals can lose their citizenship if they join a foreign army. And of course, they can lose their legal authority when they lose their minds and are not able to act in a legal sense and are placed under guardianship. It is precisely this kind of legal restriction that could result in a solution as a safety valve for a more independent status of robots. By bringing the robot again under the control of a receiver or guardian, this may be a monitoring on the organization, the development of the robot or AI system can be guided in the right direction. How far a robot should be compared with an instrument, animal, slave, married woman until having «full legal competence»1956[24] or as a child has to be determined on basis of its role in society. I will raise the issue in the next section.

7. The Artificial Intelligent Entity or Robot

[Rz 45] The foregoing discussion of legal personality needs to compare the role and personality aspects of robots with existing legal personhood. Would having legal personality be desirable for robots and society?

[Rz 46] The consideration if such an autonomously functioning artificially intelligent robot should have a secure legal subjectivity is dependent on the actual social necessity. In other words, can a society function in the future without any form of legal personality for autonomous artificially intelligent entities.

[Rz 47] In today's society are those systems or robots often controlled by natural persons but there is an undeniable trend towards the use of self-thinking and self-acting systems. Also natural persons are controlled in their professional activities in comparable ways. Robot applications will be in the field of all kinds of industry, hosting, social and physical support, care robot in physical and social sense, the sex robot, industrial robots, medical robots, surveillance robots, military robots, drones, etc. In the medical sector molecular nano-robots are deployed of chemical or organic origin.[25]

[Rz 48] The deployment of autonomous robots will in near future be comparable to the efforts of individuals representing institutions and organizations working as mandated legal representative. As an example, I refer to a social service that uses a care robot deployment in support of the needy. The robot is capable of managing the household, ordering products and services, conducting physical support and analyse medical problems and then even performing medical procedures.

[Rz 49] The legal consequences of this development are great. A society that depends on autonomous systems and robots cannot do without a legal framework of this development. It is quite conceivable that there is a need in the future society to a degree of legal responsibility and legal personality of robots so that the legal consequences of such acts can have a place in a legal framework. A distinction needs to be made between fully autonomous functioning entities and those entities that operate on the basis of previous entries by legal persons.

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24 Until 1956 women had to get pemission for performing legal acts from their husband.

25 R. Van Den Hoven Van Genderen, p. 170; R. Shoyama, Intelligent Agents: Authors, Makers, and Owners of Computer-Generated Works in Canadian Copyright Law, Canadian Journal of Law and Technology 2005, Volume 4, Issue 2, p. 129.

[Rz 50] Perhaps the development of self-learning algorithms should be embedded legally before proceeding to the question whether legal personality provision to robots is at order...

8. Legal Subject or Legal Object Specialis?

[Rz 51] The definition of legal subject as yet does not completely coincide with the characteristic of a robot, but shows an increasing number of interfaces. Because of the variation in types of robots, from vacuum cleaner to sex robot, it is impossible to provide a uniform legal regime for robots. The same goes for legal persons as limited companies, foundations, etc. These entities are classified by purpose and function and also have different rights and obligations. For individuals there is a similar specification with regard to the act. Children under guardianship and as such have a legal status that falls under the supervision of another natural or legal person. But also individuals will function under supervision or independent, dependent on their activity and affect their interpretation of legal personality and the performance of their acts. Government Officials, secret service officials, military but also medical physicians and journalists have a different legal status than other individuals concerning their function and use of rights in society.

[Rz 52] As the typing of the specific robot would be desirable, also a reconsideration of the degree of legal subjectivity is needed. In addition to the legal subjectivity, the need of society doesn't need to be equal to the legal personality such as we know it in the positive law. To the extent that we would decide whether it is time to expand the concept of legal personality to a new «sui generis» construction, elements of autonomy for the purpose of the functioning of the robot in society will have to be decisive.

[Rz 53] The degree of suitability for legal personality autonomy and intelligence can be simplified by using the following formula R = ai.mn> hi = rp.[26] It is so far considered that:

> «*Legal actions will be carried out by legal entities, i.e. legal automated systems, electronic or other, whether or not autonomous, more and more used to take part in all sorts of relationships in our global society. The fact that these systems and devices can act autonomously and may bring changes in legal relations will eventually continue to have legal effect for the user of the system.*»

[Rz 54] This reasoning applies when it is possible to figure out who the user or owner of the system is, and when there is general acceptance about the responsibility for the system. In the future this will become an increasing problem as systems function more autonomously and interact with similar systems. Car manufacturers of smart cars still have accepted a risk liability for which the producer accepts responsibility for errors or incomplete functioning of the system of automatic control systems but I expect this system will initially come to a rest because of technical and financial burden.[27]

[Rz 55] The liability of a legal person shall also apply to the director or directors, being natural persons at any time during the lifespan of the liability of the legal persons if they had the responsibility or were authorized to act for the legal person. This seems to apply to AI and robots as well. Robots can be classified simply as a legal object, but they can also occupy a special position.

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[26] R = Robot autonomous artificial intelligence times social demand exceeds human intelligence creates a need for legal personality.

[27] Examples are the molecular machines as designed by prof. Ben Feringa, Nobel laureate in 2016.

In several publications, the comparison has been made with slaves. Already in 2001[28] and later also in 2005, the intelligent agent, as a software robot, was compared with a slave, deployed to carry out a particular task.[29] If we make the comparison with the position of the Roman slave, it must also be taken into account that the slave relation between their master and society as a whole was more than instrumental. They could perform in a legal representative position, they could perform independently legal transactions and could appear as a witness in court. Moreover, he could be declared a free man by his master (manumission).

9. The Legal Acts

[Rz 56] Why is it so important to define a legal personality for robots? If the robot acts with the intention to change the legal circumstances he must also have a certain legal status beyond a legal object. In addition, we will need to find some form of liability that ultimately best suits the practical qualification and role of the robot in the social reality. It must be deemed likely that robots in the surveillance and security area as well in advisory and the health sector as well as in the more exotic services will play an important role without direct control by natural persons.

[Rz 57] The responsibility of persons who are performing legal acts for others nowadays will ultimately come back to legal persons, a group or single identifiable individuals, the government, the official, political leaders and representatives as accredited natural person. With the use of robots in those areas that same responsibility will usually be traced to the same group and the robot will play a preparatory policy role or even a representative role.

[Rz 58] It is conceivable that the robot will also be given a certain mandate in the public sector to perform such duties. Here is also a responsibility to be determined. The arrest of a suspect by a «robocop» has also to be secured legally. Legal and natural persons may be represented in future by robots, a situation other than the legal representation of natural persons. How do we solve this legally? That is only possible when it is established which specific competencies are relevant to the performance of the task of the robot.

[Rz 59] Also the actions of an automated system may have legal implications. The advanced search robot, meets other bots and will exchange some codes which can result in an agreement to reserve a seat or buy a product or service. They will enter a possible electronic agreement to be accepted by both electronic «parties» without any intervention or even confirmation by a natural person.

[Rz 60] Legal acts will be performed by persons, being legal entities. Automated systems, electronically or otherwise, are increasingly used in all kinds of relationships within our global society. The fact that these systems and robots and devices can act independently and will create changes in legal relations will eventually have an effect on the position of legal persons, parties or third parties.[30]

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28 E. Schweighofer, Robotik. Rechtliche Aspekte, in: T. Christaller et al. (eds.), Robotik. Perspektiven des menschlichen Handelns in der zukünftigen Gesellschaft, Springer, Berlin 2001, pp. 135–172.

29 U. Pagallo, Robots in the cloud with privacy: A new threat to data protection?, Computer Law & Security Review 2013, Volume 29, Issue 5, pp. 501–508.

30 J. Pirenne, Histoire des institutions et des droit privé de l'ancien Egypt, fondation Egyptologique Reine Elisabeth, Brussels II, 1939.

[Rz 61] But what is essentially the difference between the agent in human form, the natural person or the robot representative. I think we need to distinguish between the various stages of the legal process of (re) presenting stations of the (semi-) autonomous system.

[Rz 62] If the practical and legal responsibility can be traced back to a legal identification there is no change in the legal position of the practical actor necessary. The robot or AI system remains a product and legal object for which the initial legal person remains responsible.[31] Additionally this includes the arrangements with respect to product liability in the case of a defective product...

[Rz 63] As yet this exception is pushed aside by producers of autonomous or semi-autonomous functioning car like the google car, Volvo and Tesla. It would also not be wise at this time from a public relations standpoint. But whether this risk liability will be accepted in the near future seems doubtful given the cost and the increasing impossibility of the damage alone due to the producer.

[Rz 64] Even in the case of natural persons, as a mandated representative, who loses his reason and sanity, the proceedings may be annulled as a non-deliberate disturbance of the system. One can draw a parallel with the robot in the latter cases, it can reduce the liability of the initiating individual in the use of this system or can exculpate all parties of the legal action, maybe even the robot itself if it has legal responsibility as we decide.

[Rz 65] This view I share with Voulon in the sense that any legal effect which is caused by an autonomous and less autonomous system must be attributed to the natural or legal person who has made the decision to commission the system in its service operations.[32] One would apply the level of liability of the person or entity related to the degree of control exercised over the autonomic system thereby also taking the legal effect into account. However, this would only be the case with regard to liability and accountability to the natural or legal person. The malfunction or failure of the autonomic system can be significant with regard to the recognition of the legal liability of the actor. The autonomous system itself, however, can never bear any legal responsibility until there is a degree of legal personality.

10. Conclusion and Steps into the Future

[Rz 66] Should an autonomous system or robot, even with an independent intelligence and emotion to function in our society not need to have a legal status that is similar to the rights and obligations of natural and legal persons in the positive law? How will the contours be defined. Even as an autonomous system passes the Turing test, this would not create any legal responsibilities per se. However, it is advisable that certain forms of acting by autonomously functioning intelligent systems as social robots or legal enforcement robots may be conceivable to obtain a certain form of legal personality to carry out their tasks. This though, is based on the essential requirement that that there is a social and legal necessity.

[Rz 67] The legal positioning of robots could be selected for an amendment of the law or possibly even a sui generis standard for certain autonomous robots. This legal positioning will be dependent on the degree of autonomy and social need. These changes in the law will depend on a

31 M. Kaser/F. Bernard Joseph Wubbe, Roman Private Law, Enschede, 1971.

32 M. Voulon, Contract Automatic, Dissertation, Amsterdam 2010.

correct description of the reliability of the representation by the robot, the purpose of the actions and the legal consensus of the legal entities involved. If these concepts are agreed upon there still will be the acceptance of the government and parliament to create or adapt a legal framework. For how difficult and time consuming this process will be, reference can be made to the acceptance of the non-natural person in the positive law but also to the acceptance of the unfortunately «fairly long» discussion on equality between written documents and electronic documents and acceptance of electronic signatures.

[Rz 68] On top of that it probably will be necessary to develop some form of certification to determine whether the autonomously functioning robot can be accepted to perform legal acts. Which acts will be considered legal acts are variable, depending on the function of the robot as described above.

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