

THE SEARCH FOR A NEW LEGAL PERSONALITY IN THE DIGITAL AGE: ARTIFICIAL INTELLIGENCE

DİJİTAL ÇAĞDA YENİ BİR HUKUKİ KİŞİLİK ARAYIŞI: YAPAY ZEKÂ

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Abstract: The issue of granting legal personality to artificial intelligence, in essence, refers to a decision to grant a set of rights and related obligations to that entity. There are some basic questions that should be answered by especially information technology law doctrine and practice, regarding which criteria should be sought in the process of establishing a legal policy for the recognition of non-human beings and transforming this legal policy into a normative regulation.

The starting point in solving the problem of whether an entity can be recognized as a personality is determining the meaning, scope and legal nature of the concept of personality. In the second stage, the entity, which is envisaged to be granted personality rights, is subjected to an evaluation process within the framework of the material approach, which considers the personality as an existential structure, and the formal approach, which is based on whether the law and society ascribe personality to an entity.

There is no doubt that systems with a limited scope of activity and autonomy, defined as narrow or weak artificial intelligence, should be accepted as objects by the law, depending on these characteristics. On the other hand, the level of success reached by cognitive technology today has also allowed the development of autonomous artificial intelligence, which can learn from its own experiences through machine learning with different algorithmic structures and complex software and can act independently without any human interference. The autonomous decisions and actions taken by the artificial intelligence during the fulfilment of the tasks defined for it can sometimes damage the assets or personal assets of individuals or cause a breach of contract in obligation. In this respect, today, the need to develop a unique personality model has emerged in terms of artificial intelligence beings with a strong autonomy feature.

Keywords: Personality, legal status, artificial intelligence, capacity to have rights and obligations, capacity to act, smart machines.

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Özet: Yapay zekâya hukukî kişilik tanınması konusu özünde, o varlığa pozitif hukuk karşısında bir dizi hak ve buna bağlı yükümlülükler tanınmasını ifade etmektedir. İnsan olmayan varlıklara kişilik tanınmasına yönelik bir hukuk politikası oluşturulması ve bu hukuk politikasının normatif bir düzenlemeye dönüştürülmesi sürecinde hangi ölçütlerin aranması gerektiğine ilişkin özellikle bilişim hukuku öğretisi ve uygulamanın yanıtlanması gereken bazı temel sorular bulunmaktadır.

Bir varlığa kişilik tanınıp tanınamayacağı sorununun çözümünde başlangıç noktası, kişilik kavramının anlamının, kapsamının ve hukukî niteliğinin belirlenmesidir. İkinci aşama ise, kendisine kişilik hakkı tanınması öngörülen varlığın, kişiliği varoluşsal bir yapı olarak gören maddi yaklaşım ile bir varlığa hukukun ve toplumun kişilik atfedip atfetmemesini esas alan şekli yaklaşım çerçevesinde bir değerlendirme sürecine tabi tutulmasıdır.

Dar ya da zayıf yapay zekâ olarak tanımlanan sınırlı bir faaliyet alanı ve otonomi özelliğine sahip sistemlerin, bu niteliklerine bağlı olarak hukuk karşısında nesne olarak kabul edilmeleri gerektiği konusunda herhangi bir tereddüt bulunmamaktadır. Buna karşılık, günümüzde dijital çağın ve bilişsel bilimin ulaştığı başarı düzeyi, farklı algoritmik yapılar ve kompleks yazılımlar ile makine öğrenmesi yoluyla kendi deneyimleriyle öğrenebilen, herhangi bir dış müdahale olmadan bağımsız şekilde hareket edebilen otonom yapay zekânın geliştirilmesine de olanak tanımaktadır. Söz konusu varlıkların, kendileri için tanımlanan görevleri yerine getirmeleri sırasında aldıkları otonom kararlar ve gerçekleştirdikleri eylemler zaman zaman kişilerin malvarlığı veya şahıs varlığı değerlerine zarar vermeleri ya da bir borç ilişkisinde borca aykırılığa yol açmaları yönüyle hukukî bir sorumluluğun doğumuna neden olmaktadır. Bu itibarla, günümüzde, güçlü bir otonomi özelliği bulunan yapay zekâlî varlıklar bakımından kendine özgü bir kişilik modelinin geliştirilmesi ihtiyacı ortaya çıkmış bulunmaktadır.

Anahtar Kelimeler: Kişilik, hukukî statü, yapay zekâ, hak ve fiil ehliyeti, akıllı makineler.

INTRODUCTION

The first seeds of human-machine cooperation were planted with the industrial revolution, which started to affect the world from the second half of the 18th century. Due to the data explosion caused by smart and connected technological products in the digital age we live in, the level of sophistication reached by cognitive science has produced artificial intelligence technology based on a modelling that imitates biological human algorithms. As of the point we have reached today, human and artificial intelligence supported systems add value to the world economy by working in cooperation and coordination at almost every stage of industrial activities such as production, marketing,

sales, inspection and logistics carried out in many sectors and business models.

Since the industrial revolution, human-machine cooperation has come a long way and has become an actor that makes significant contributions to human life. In our time, this approach has evolved from the production process carried out with muscle power and simple machines to a point where a human-machine mixed entity is designed, consisting of computers imitating biological intelligence and people with machine speed and synthetic intelligence.¹ As a result of this mental revolution, the extent and scope of the progress made within the scope of human-machine interaction has opened the door to project studies aimed at transferring many utopian dreams that were deemed impossible in the past to real life. Because, while humans have unique abilities such as intuition, imagination and adaptability that cannot be imitated by machines and algorithms, machines also have abilities such as automation, machine learning and synthetic intelligence that provide great advantages compared to muscle and biological intelligence.²

With such a strong and talented existence, human beings aim to eliminate global problems that may take many years to solve with traditional methods in a short time, and to reach the highest levels in economic and social life in terms of productivity, job satisfaction and social welfare. More importantly, scientists aim to reach much deeper and more sophisticated layers by breaking the static patterns of world civilization, within the framework of cybernetic society, thanks to the adaptive and dynamic structure of super artificial intelligence.³

¹ J. Gunther/F. Munch/S. Beck,/S. Loffler/C. Leroux/R. Labruto, Issues of Privacy and Electronic Personhood in Robotics, Proceedings - IEEE International Workshop on Robot and Human Interactive Communication, 2012, p. 818 10.1109/RO-MAN.2012.6343852.

² Ray Kurzweil, Kurzweil Network, Accelerating Intelligence, Essays, (singularity Q&A), December 2011. <https://www.kurzweilai.net/singularity-q-a> SET:08.08.2020; Michael E. Porter/James E. Heppelmann, *Harvard Business Review*, HBR'S 10 Must Reads, "Artırılmış Gerçeklik Stratejisine Neden Her Organizasyonun İhtiyacı Vardır?", (Nadir Özata), Harvard Business School Publishing Corporation, 2019, p. 108.

³ James H. Wilson/Paul R. Daugherty, *Harvard Business Review*, HBR'S 10 Must Reads, "İşbirliğine Dayalı Zekâ: İnsanlar ile Yapay Zekâ Güçlerini Birleştiriyor", (Nadir Özata), Harvard Business School Publishing Corporation, 2019, p. 187;

However, it seems inevitable that a radical transformation that will fundamentally change the established rules and systems will lead to a chaotic situation in the social structure and economic relations unless supported by positive law. Therefore, while transferring the human-machine integration project to real life, it is of great importance not to neglect the efforts to establish the legal infrastructure. For example, the uncertainty of the legal status of artificial intelligence, which will work together or integrated with people and will also become a part of social life and laws in force, will cause an important problem of trust and stability in social relations. In this context, determining the legal status of these entities, which have humanoid characteristics, perform the tasks done by humans, and interact with people or objects in carrying out these tasks will be a very important step in terms of protecting the principle of legal security.⁴

I. LEGAL PERSONALITY OF ARTIFICIAL INTELLIGENCE

A. DISPUTE ON THE LEGAL PERSONALITY OF ARTIFICIAL INTELLIGENCE

The issue of granting legal personality to a non-biological intelligence essentially means a decision to grant that entity a set of rights and obligations. Whether such a decision can be made regarding the recognition of personality in terms of non-human beings, and if so, the criteria that should be sought in the decision-making process are considered to be the most fundamental questions in the academic field and practice.

There is a two-stage evaluation process to be followed in the recognition of personality for a non-human entity. Accordingly,

Thomas H. Davenport/Rajeev Ronanki, Harvard Business Review, HBR'S 10 Must Reads, "Gerçek Dünya İçin Yapay Zeka", (Nadir Özata), Harvard Business School Publishing Corporation, 2019, p. 29.

⁴ S. M. Solaiman, Legal Personality of Robots, Corporations, Idols and Chimpanzees: A Quest for Legitimacy; University of Wollongongs, Faculty Of Law, Humanities And The Arts - Papers, 2017, p. 2, 3. According to Hubbard, a machine that claims to have the necessary capacity to acquire personality, even though it is not a human, can claim to be considered equal to a human. F. Patrick Hubbard, Do Androids Dream?: Personhood and Intelligent Artifacts, University of South Carolina Scholar Commons, 83 Temp. L. Rev. 405 (2011), p. 407.

the starting point in solving the problem of whether an entity can be recognized as a personality is determining the meaning, scope and legal characteristic of the concept of personality. In the second stage, the entity, which is envisaged to be granted personality rights, is subjected to an evaluation process within the framework of the material approach, which sees personality as an existential structure, and the formal approach, which is based on whether the law and society ascribe personality to an entity.

The view that considers personality from a material perspective and accordingly adopts the philosophical and moral dimension of personality argues that as a rule, entities other than humans cannot be granted personality rights. The view that adopts personality in a formal sense, on the other hand, argues that whether the law and society ascribe personality to an entity will be decisive in the solution of the personality problem.⁵ In this context, according to the approach advocating the formal personality, in the formation of such a decision, the scope of the rights and duties envisaged to be granted and the nature of the capabilities of that entity play an important role, rather than the physical structure, technical features or other complex functions of the assets in question. The determination of these qualifications will also guide the determination of the scope and limits of the rights and obligations envisaged for artificial intelligence systems.⁶

The decision to grant legal personality to non-biological entities depends on pragmatic as well as conceptual consequences. Accordingly, the degree of functionality and social roles of artificial intelligence entities in the social structure, whether they will be generally accepted by the society, will determine whether they can acquire legal status.⁷

The effective and indispensable roles of artificial intelligence systems in social and economic life and certain human-specific

⁵ Mireille Hildebrandt, "From Galatea 2.2 to Watson – and Back?": M. Hildebrandt and J. Gaakeer (eds.), (Human Law and Computer Law: Comparative Perspectives, Springer 2013, s. 18; J. Frederick White, Personhood: An Essential Characteristic of the Human Species, *The Linacre Quarterly*, 2013;80(1), p. 74.

⁶ Tyler Jaynes, Legal personhood for artificial intelligence: citizenship as the exception to the rule, 2019, *AI & SOCIETY*, p. 2.

⁷ Samir Chopra/Laurence F. White, *A Legal Theory for Autonomous Artificial Agents*; The University of Michigan Press, E-book, Ann Arbor, MI: University of Michigan Press, <https://doi.org/10.3998/mpub.356801> USA, 2011, p. 156 - 157.

abilities cause pressure on the society to transform the operational status of such entities into a normative status. In addition, the possible changes that will occur in the form of interaction between humans and artificial intelligence assets in the near future, and the expectations and demands that will arise regarding the duties of artificial intelligence in the social structure, make scientific studies aimed at giving these assets legal status are very important.⁸

It has been a matter of debate since the Middle Ages whether legal personality can be recognized for other beings as well as for people who are considered to have innate rights and personality.⁹ These debates basically arose from the need to grant legal personality to entities other than real persons, due to social and economic necessities. Namely, the remarkable change in urban life and the intensification of social relations have revealed problems that require long-term and collective work. This situation has increased the need for legal entities who have a longer life than people and are independent of the existence of the people who make them up. For this reason, for the first time, the right of personality was granted to entities other than people, groups of people or goods (such as associations, endowments or companies), and the opportunity to have rights and debts within the limits drawn by the law was introduced.¹⁰

Although there have been intense discussions and evaluations from past to present regarding the nature of legal personality and which entities should be given personality, in reality, the social realities and lifestyles of the time and geography in which it is valid

⁸ Chopra/White, *Autonomous Artificial Agents*, s. 154; **Çağlar Ersoy, Robotlar, Yapay Zekâ ve Hukuk**, 3th ed. İstanbul, Nisan 2018, p. 83 – 84, Jaynes, p. 14.

⁹ For example, although there are examples of legal entities in Roman law, this was realized very late and in an unsystematic way. In this context, in Rome; The Roman State granted legal personality to the societies (collegium) and religious associations (sodalitas) established by tradesmen and craftsmen. In Islamic law, foundations with legal personality have been widely used and have played important roles in shaping the social structure. Özcan K. Çelebican, *Roma Hukuku, Yeni Medenî Kanuna Uyarlanmış 18tk ed.* Turhan Kitabevi, Ankara 2019, p. 181;

¹⁰ Kılıçoğlu, *Medeni Hukuk*, p. 213; Aydın Zevkliler/ Şeref Ertaş/Ayşe Havutçu/ M. Beşir Acabey/Damla Gürpınar, *Yeni Medeni Kanuna Göre Medeni Hukuk (Temel Bilgiler)*, 10th ed., Ankara 2018, p. 133; Rona Serozan, *Medeni Hukuk, Genel Bölüm Kişiler Hukuku*, 4th ed., Vedat Kitapçılık, İstanbul 2013, p. 493; Mustafa Dural/Tufan Ögüz, *Türk Özel Hukuku, V. II, Kişiler Hukuku*, 20th ed., İstanbul 2019, p. 224

have determined the course of this issue.¹¹ Because, in no period of history, a concrete and binding criterion has been determined in terms of granting personality rights to non-human beings, and a consistent and uniform application has not been developed as to whether being a biological human is a necessary element in order to have personality. For example, in Roman law, while some non-human entities such as monasteries, cities, and rivers were granted personality rights, rights were not recognized for spouses and children who were subject to pater familias. Pater familias became the subject of legal rights and obligations on behalf of the household, while the wife and children of pater familias could only indirectly enjoy legal rights. In this period, since strict family economy conditions were dominant rather than state power, each family had its own rules of law, customs and traditions. As a result of this situation, the law of persons was also shaped within the framework of the rules and beliefs that were valid in the society.¹²

Regardless of the valid administrative or legal system, the only power in the recognition of personality throughout human history has been the state and political will. The political will has used this preference by making laws within the framework of the current legal system or by introducing regulatory provisions under another name.¹³ There is no doubt that changing social needs and economic developments are also determinants in the formation of the political will.¹⁴ As a matter of fact, the legal rules regulating the relations of individuals with each other in social life have only granted legal capacity to real persons in the past. With the aforementioned regulations, only granting rights and personality to people was a necessity rather than an option. Because social life and relations consisted only of people. Over time, the change in social structure and relations has made it necessary to grant personality to other entities as well as legal entities.¹⁵ Since the Middle

¹¹ Chopra/White, *Autonomous Artificial Agents*, p. 157.

¹² Çelebican, p. 160.; Chopra/White, *Autonomous Artificial Agents*, p. 157; Ersoy, p. 86.

¹³ Chopra/White, *Autonomous Artificial Agents*, p. 155.

¹⁴ Kılıçoğlu, *Medeni Hukuk*, p. 7; Bilge Öztan, *Medeni Hukukun Temel Kavramları*, 44th ed., Ankara 2019, p. 3. Çelebican, p. 178; Zevkliler/Ertaş/Havutçu/Acabay/Gürpınar, p. 1; Nomer, p. 1.

¹⁵ Solaiman, s. 12; Ugo Pagallo, Vital, Sophia, and Co. – The Quest for the Legal Personhood of Robots, *Law School, University of Turin, Information* 2018, 9, 230, p. 4 - 9. doi:10.3390/info9090230.SET:20.7.2020.

Ages, no civilization has been indifferent to this change, and has paved the way for personality recognition for beings other than humans, albeit in different degrees and forms. For this reason, no matter how many theories and philosophical arguments are produced on personality, the decision to grant personality status to non-biological intelligence will be taken by the legislator within the framework of a certain legal policy, not according to the material and philosophical understanding of personality. Social realities and needs play a decisive role in the formation of legal policy.

In today's world, social life and relations have become too intricate and complex to be carried out only with real and legal persons. In the face of this situation, it seems inevitable that a new and radical codification will be made for the legal systems that are constructed according to social relations and traditional structures consisting only of human beings. Because human-like beings are no longer fiction and humanity has begun to debate whether legal personality can be attributed to synthetic intelligent beings at the international level. The European Parliament's request from the European Commission to draft a law addressing the future challenges of artificial intelligence is a clear proof of this.¹⁶

Although the goal of including artificial intelligence among entities with legal personality, as in real persons and legal entities, is the result of a legal and actual necessity, this goal may also have some negative social and economic consequences. For this reason, when making legal regulations regarding personality, a multifaceted study should be carried out and the necessary preventive mechanisms should be provided for issues that may damage the legal system.¹⁷

Artificial intelligence systems need to be handled from a methodological point of view in order for personality discussions on artificial intelligence to progress on the right ground and to reach effective solutions. In this sense, it is of great importance to determine the scope and quality of artificial intelligence in all its aspects and to make adjustments to the extent that it is suitable for these

¹⁶ Joanna J. Bryson/Diamantis E. Mihailis/Thomas D. Grant, *Of, for, and by the People: The Legal Lacuna of Synthetic Persons*, *Artif. Intell. Law* (2017), 25, p. 274

¹⁷ Bryson/Mihailis/Grant, p. 274.

determinations. Because artificial intelligence and robotic systems have two different aspects, engineering and law. The solution of the problems related to the technology in question requires the evaluation of technical analysis and the concepts of legal status, accountability and responsibility separately.¹⁸

B. SCIENTIFIC VIEW ON THE LEGAL STATUS OF ARTIFICIAL INTELLIGENCE

1. In General

Although there are different views on determining the legal status of the new-generation artificial intelligence in the doctrine, these are generally shaped around historical, philosophical, sociological and legal reasons. The approach, which evaluates personality from its philosophical dimension and adopts moral personality in this sense, argues that personality cannot be granted to artificial or biological entities other than humans, depending on accepting personality as a set of existential values acquired from birth. On the other hand, the approach that embraces the formal and legal meaning of personality accepts that artificial beings can also be granted a unique legal status, provided that it is justified by social facts and does not contradict the rules of positive law.¹⁹

The material and moral view²⁰ of personality argues that, as a rule, no entity other than humans can be granted personality, and accordingly, it accepts artificial intelligence as a property subject to ownership, not a subject of rights.²¹ However, it is widely accepted in

¹⁸ Pagallo, Legal Personhood, p. 5.

¹⁹ White, p. 74 - 75.

²⁰ The view of material and moral personality is essentially based on the hypothetical view of personality defended by jurists such as Savigny and Salmond. Haluk Aşar, Hayvan Haklarına Yönelik Temel Görüşler ve Yanılgıları, KAYGI, 2018, p. 245.

²¹ For detailed information about the view that accepts artificial intelligence as property see Andrea Bertolini, Robots as products: the case for a realistic analysis of robotic applications and liability rules, *Law, Innovation and Technology*, 2013, 5(2), p. 242 vd; Solaiman, p. 35; E. Diamantis Mihailis, The Extended Corporate Mind: When Corporations Use AI to Break the Law, *North Carolina Law Review*, Vol. 98, Number 4, 98 N.C. L. REV. 893 (2020), p. 926; Başak Bak, Medeni Hukuk Açısından Yapay Zekânın Hukuki Statüsü ve Yapay Zekâ Kullanımından Doğan

the doctrine that artificial intelligence beings have humanoid abilities and that these beings should be granted a unique personality status, provided that this situation is determined.²²

The reasons for the approach that rejects granting personality rights to entities based on artificial intelligence and robotic technology are generally as follows: Since human beings are superior beings that dominate all beings, non-human beings cannot be granted personality rights, in order to obtain personality, they must have the ability to have rights and obligations, recognition of personality will be a negative decision for the future of humanity, and it is necessary to determine the legal responsibility of artificial intelligence and to take legal action. It is based on issues such as that it is not necessary for artificial intelligence to gain personality status because artificial intelligence can perform its functions in other ways without gaining personality status, and that such intelligent machines have not yet met the necessary conditions to gain personality status.²³

The view that rejects legal personality, based on its acceptance of humans as superior beings that dominate all beings, argues that artificial intelligence is the subject of property law or that there is a slavery-like relationship between humans and artificial intelligence, and also argues that legal relations and responsibility should be determined within this framework.²⁴

The approach that accepts legal personality recognition for non-biological intelligence deals with personality not in its moral or

Hukuki Sorumluluk, *TAAD*, S. 35, Y. 9, Temmuz 2018, p. 218; Sinan Sami Akkurt, Yapay Zekânın Otonom Davranışlarından Kaynaklanan Hukukî Sorumluluk, *Uyuşmazlık Mahkemesi Dergisi*, Y. 7, I.13, Haziran 2019, p. 44,

²² Solum, p. 1284; Gabriel Hallevy, Virtual Criminal Responsibility, *Original Law Review*, 2010, 6(1), p. 6 vd.; ASARO Peter; Robots and responsibility from a legal perspective, 2007, <http://www.peterasaro.org/writing> SET:14.8.2020; Pagallo, (Legal Personhood), p. 1 vd.; Chopra/White, Autonomous Artificial Agents, p. 157; Emre Bayamlioğlu, Akıllı Yazılımlar ve Hukuki Statüsü: Yapay Zekâ ve Kişilik Üzerine Bir Deneme", Uğur Alacakaptan'a Armağan V. - 2, 1. B., İstanbul Bilgi Üniversitesi Yayınları, İstanbul 2008, p. 138

²³ Pagallo, (Legal Personhood), p. 7; Hildebrandt, p. 18; Peter Asaro, Robots and responsibility from a legal perspective; 2007, <http://www.peterasaro.org/writing>; SET:14.8.2020; Bayamlioğlu, p. 138; Hallevy, p. 6.

²⁴ Solum, p. 1284; Bak, Yapay Zekânın Hukukî Statüsü ve Sorumluluk, p. 218; Seda Kara Kılıçarslan, Yapay Zekânın Hukukî Statüsü ve Hukukî Kişiliği Üzerine Tartışmalar, *YBHD*, 2019/2, p. 378.

philosophical sense, but in its form and legal dimension. Accordingly, the aforementioned view accepts that a personality specific to artificial intelligence can be established and puts forward various solution suggestions for determining personality. These include suggestions such as establishing a legal entity-like structure, recognizing the electronic personality model, developing the concept of non-human persons, and adopting limited-purpose personality or quasi-personality models.²⁵

The view that adopts the liberal, egalitarian personality approach argues that if a being has sufficient characteristics to gain personality, that being should be accepted as a person, and argues that granting personality to non-biological beings will break the negative perception on the human race due to the slavery system in the past.²⁶ In addition, the aforementioned view argues that the world will become more equal and peaceful in terms of social relations and the role of humanity in our increasingly technological age. This view accuses the approach that rejects the recognition of personality, claiming that they attribute different values to non-human beings simply because of the species they belong to, of chauvinist protection of a special status for biological creatures, that is, of speciesism.²⁷

²⁵ Lawrence B. Solum, Legal personhood for artificial intelligence. *North Carolina Law Review*, 70(4), p. 1284; ZIMMERMAN, Evan J.: Machine Minds: Frontiers In Legal Personhood, Zimmerman, Evan, Machine Minds: Frontiers in Legal Personhood, February 12, 2015, p. 41. <http://dx.doi.org/10.2139/ssrn.2563965>. SET.3.9.2020. ASARO, Robots and responsibility from a legal perspective, 2007, <http://www.peterasaro.org/writing>; Bayamlıoğlu, p. 138; Kılıçarslan, p. 377 vd. Murat Volkan Dülger, Yapay Zekalı Varlıkların Hukuk Dünyasına Yansıması: Bu Varlıkların Hukuki Statüleri Nasıl Belirlenmeli? *Terazi Hukuk Dergisi*, V. 13, I. 142, Haziran 2018, p. 85.

²⁶ Chopra/White, Autonomous Artificial Agents, s. 186; David Calverley, Imagining a non-biological machine as a legal person, Springer-Verlag London Limited 2007, published online: 13 March 2007, Springer-Verlag London Limited 2007, AI & Soc (2008) 22: p. 523. status.irational.org/legal_person_machine.pdf. Gunther Teubner, Rights of Non-humans? Electronic Agents and Animals as New Actors in Politics and Law, *Journal of Law and Society*, Vol. 33, 2006, p. 6.

²⁷ For detailed information about "speciesism" see, Peter Singer, Hayvan Özgürleşmesinin 30. Yılı, *New York Review of Books*, V. 50, N. 8, 15.5.2003, (Hayrullah Doğan), <https://www.birikimdergisi.com/dergiler/birikim/1/sayi-195-temmuz-2005/2379/hayvan-ozgurlesmesinin-30-yili/5909>. SET:11.8.2020; Samir Chopra/Laurence F. White, Artificial Agents: Personhood in Law and Philosophy, 2015, <https://www.researchgate.net>. SET.17.9.2020.

As a result, it is predicted that the new generation artificial intelligence will become a part of social life in the near future due to its unique technical and cognitive features and human-like abilities. It will be inevitable for any artificial or biological entity that will become the subject of social life and relations to fall within the scope of law. On the other hand, today's positive law does not contain any regulation regarding the existence and functioning of artificial intelligence, and current regulations are far from finding solutions to disputes arising from such advanced cognitive technology. For this reason, instead of looking for solutions within the regulations made by considering the traditional methodology, it is necessary to adopt solution-oriented approaches and make regulations compatible with today's information age perspective and in line with the requirements of the age.

2. The View That Rejects Granting Legal Personality to Artificial Intelligence

a. Reasons For Denying Legal Personality

The reasons for the approach that rejects granting an independent legal status to artificial intelligence and robotic entities are generally based on that these entities must have the ability to acquire rights and obligations in order to acquire personality, that granting personality rights to artificial intelligence would be a negative decision for the future of humanity, and that it is necessary to grant legal personality to these entities. It is based on very different arguments, such as that there is no such thing, and that intelligent machines have not yet met the necessary conditions to gain personality. However, the arguments in question actually reflect a common point of view arising from a single source. The view that human being is a dominant, superior being over all beings constitutes the basic starting point of this approach. In this sense, the approach in question, as a reflection of the understanding of moral personality, argues that humans are the only beings to whom personality can be attributed.²⁸

²⁸ Wolfgang Friedmann, *Legal Theory*, London 1953, 25. Kısım, p. 396- 412 (Tüzel Kişilik Nazariyeleri ve Tatbikat, T. Ansay, p. 50 - 51); Solaiman, p. 15; White, p. 74.

The moral view of personhood recognizes that only humans are highly self-conscious beings with the capacity of thinking, planning, biological intelligence, emotion, as well as physical capacity. Therefore, humans are in a unique position compared to other beings. Based on this idea, it is accepted that since only people can be the subject of rights and obligations, people should also have an independent personality right.²⁹

According to the approach referred to as “natural rights theory”, people have non-assignable and indefeasible rights from birth.³⁰ Humans have acquired legal personality within the framework of these rights they have.³¹ In this context, minors or wards or an individual in a vegetative state, also have personality rights. In contrast, since the basic idea of designing AI as a being belongs to humans, AI’s freedom and status as a moral being are inherently denied. As a reflection of this view, the relationship between humans and other beings should be evaluated within the scope of either property law or slavery.³²

aa. Artificial Intelligence Lacking the Required Qualities for Personality

Some authors argue that since personality is a reflection of intelligence and internal abilities, it should only be valid for conscious beings, and accordingly, artificial intelligence cannot achieve personality because it does not yet have the necessary qualities for personality. However, according to this view, non-biological entities should also be granted a legal status if they acquire human-specific abilities such as consciousness, will, autonomy, emotion and intelligence.³³ Because if it has these abilities, artificial intelligence will turn into a conscious being, that is, a moral personality.³⁴ It is also stated that while granting personality to individuals who do not

²⁹ Hildebrandt, p. 18.

³⁰ Işıl Bayar Bravo, Thomas Hobbes ve John Locke’un Doğal Hak Anlayışları, p. 74, 75. <http://hfsa-sempozyum.com/wp-content/uploads/2019/02/HFSA23-B-Bravo.pdf>. SET.15.8.2020.

³¹ Solum, p. 1259.

³² Bertolini, p. 225; Solaiman, p. 29.

³³ Calverley, p. 527, Zimmerman, p. 22, 41, Bertolini, p. 217.

³⁴ Dorna Behdadi/Christian Munthe, A Normative Approach to Artificial Moral Agency, *Minds & Machines* 30, 2020, p. 197.

have the power to distinguish, denying it to artificial intelligence with advanced human abilities would be contrary to equality and the liberal theory's definition of personality. From this perspective, it is argued that if artificial intelligence systems meet the necessary conditions for personality, they should gain the right to self-property within the scope of Locke's liberal personality theory.³⁵

The question of whether non-biological intelligence can become a humanoid entity with human-specific abilities such as consciousness, will, autonomy, emotion and intelligence is an important subject of cognitive and philosophical theories. The view that approaches this question positively claims that artificial intelligence can experience emotions. Accordingly, emotion is a facet of the human mind, and if the human mind can be explained by a computational model, the basis of artificial intelligence is a system based on modelling the human brain, then emotion can also become a cognitive process. In this context, if human emotions obey the laws of nature, then theoretically, a computer program could also imitate the operation of these laws. Therefore, artificial intelligence will be able to produce outputs and behaviours that mimic human intelligence.³⁶

According to the view that argues that non-biological intelligence cannot have human-specific abilities, even if artificial intelligence produces behaviours that imitate human intelligence, consciousness and emotions, this will never mean that artificial intelligence has real emotions, consciousness and intelligence. Because no matter how perfect the simulation performed by artificial intelligence seems, a computer simulation of an earthquake never means an earthquake.³⁷ Furthermore, autonomy and the right to self-determination alone are not sufficient to grant legal personality to any entity. As a matter of fact, in the historical process, gaining legal rights has been conditioned on assuming social obligations and duties. Thus, the aforementioned condition has made it necessary for the entity to be attributed

³⁵ Jeremy Waldron, Property and Ownership, Stanford Encyclopedia of Philosophy-<https://plato.stanford.edu/SET.29.9.2020>; Solum, p. 1276.

³⁶ Owen J. Flanagan, The Science of The Mind, Second Edition, Massachusetts Institute of Technology 1991, p. 253. (Solum, p. 1270).

³⁷ Solum, p. 1275.

personality to become a social reality.³⁸ Within the framework of this view, it is deemed necessary for an entity to have the ability to have rights and duties in order to live in an orderly manner as a member of society. It is also stated that this ability is the only quality taken into consideration by the courts in determining personality, whereas beings such as chimpanzees and artificial intelligence lack this critical feature, even though they have some advanced abilities.³⁹

According to another view that tries to harmonize theories about whether non-biological intelligence can have human-specific abilities, if an entity is successful in the test to determine the conditions required for granting personality, this entity should be legally recognized as an autonomous personality with a self-identity.⁴⁰

The skills that are stated to be present in artificial intelligence in order to be successful in the personality test are as follows: It is considered as the ability to think and communicate complexly by interacting with the environment, a sense of self with concern for achieving a life plan, and the ability to live in community with other people based on at least mutual personal interests.⁴¹ Complex intellectual interaction is the ability of a living being to interact meaningfully with the environment by receiving and deciphering inputs from its environment and sending understandable data to its environment. This interaction must be diverse and sophisticated enough that we can view it as the product of complex thought. It is accepted that the form of interaction sought in order to gain personality must be physical communication.⁴² In this context, it is stated that new generation artificial intelligence entities have the ability to interact physically with the world, for example, a

³⁸ Teubner, p. 7.

³⁹ Solaiman, p. 37; Teubner, p. 7.

⁴⁰ Hubbard, (Personhood), p. 417, 419.

⁴¹ Hubbard, Personhood, p. 419; Kılıçarslan, p. 373; Bacaksız/Sümer, p. 136- 137. Another view is that these abilities is explained as the capacity to communicate with the environment, internal knowledge, knowledge of the external or external world, a certain level of willpower and individuality. Solaiman, p. 29. Solum states that in order for artificial intelligence to succeed in the personality test and become a competent being, it must have the ability to make moral judgments and a sense of justice.

⁵Solum, p. 1251.

⁴² Ray Kurzweil, *The Singularity is Near: When Humans Transcend Biology*, Viking, 2005, p. 260.

smart computer can interact with the world through remote-controlled robotic machines.⁴³

Another characteristic deemed necessary for a personality test is having a unique sense of self. Being a unique individual requires having a degree of imagination in designing and implementing a life plan. This criterion, which is deemed necessary for non-biological entities, does not mean that these entities are highly original and productive. Because real people cannot always reveal their originality and imagination, and they often lead a routine life. Therefore, the important thing in the sense of self is having a perception of dreams and goals for life and the planning and concretization of these dreams and goals. In order for an artificial intelligence-supported machine to become a self-aware being with a life plan, the machine must somehow care about the success of this plan.⁴⁴

The last characteristic sought for the personality test is the ability of non-biological entities to live in communities with other people. Accordingly, artificial intelligence must be able to find a place for itself in society with other people and interact responsibly as a member of that community. As a matter of fact, the purpose of granting personality rights to an entity is to give that entity a legal status in social relations and interaction. Because it is clear that in the near future, new generation artificial intelligence systems will become an important subject against social structure and law. Therefore, personal rights are necessary and meaningful only within a community of autonomous individuals.⁴⁵

According to the view that is based on the personality or capacity test in granting personality to non-biological intelligence, an artificial intelligence that passes the test and reaches the level of self-awareness ceases to be an object and turns into an entity that can act autonomously. Such artificial beings would have the capacity to perceive their own freedom and existence and to cause intentional harm. As a result of this behaviour, artificial intelligence will have the right to be accepted as a subject before the law and to claim legal personality. If they pass the capacity test, artificial entities can be held personally liable without the

⁴³ Hubbard, (Personhood), p. 420

⁴⁴ Hubbard, (Personhood), p. 421

⁴⁵ Hubbard, Personhood, p. 423; Kılıçarslan, p. 376.

need to identify the human behind them. In addition, the acceptance of beings who contribute to social life and have sophisticated abilities as individuals is of great importance in terms of the development of society and demonstrating the will to live together peacefully. Even though it is not human, artificial intelligence that has passed the test will be able to claim that it is equivalent to a human as it has reached the super artificial intelligence stage as a self-aware being. On the other hand, the narrow artificial intelligence that is valid today, no matter how cognitively complex tasks it performs, will not have the right to personality, as it only exhibits functional features, not behaviour in the philosophical sense.⁴⁶

Personality test is similar to the Turing Test in that it is based on behavioural criteria and is a method based on comparing artificial intelligence with a real person. However, the personality test is more comprehensive than the communication-based test proposed by Turing. Because one component of the personality test is originality, it is based on measuring the ability to learn and implement a life plan. In determining personality capacity, the assessment of whether an entity demonstrates the ability to analyse its behaviour, complex intellectual interaction, sense of self, and being a member of its community seems quite complex. Because the mentioned test has an abstract and vague nature, it also requires subjective interpretations, as in the measurement of complex thought.⁴⁷

According to an opinion put forward in the doctrine, even if artificial intelligence passes the capacity or personality test to determine whether it has human-specific abilities, artificial intelligence should not be granted an independent personality. Because a system's successful imitation of some human abilities does not turn it into a conscious and thinking being. The success of these beings in the personality test is based on their good imitation of human behaviour and mind, but in reality, they lack characteristics such as perception, understanding, comprehension and thinking.⁴⁸ Moreover, the fact that artificial intelligence has passed the capacity test alone does not grant it a legal status. Even if an entity has

⁴⁶ Hubbard, *Personhood*, p. 405- 408, 428; Bertolini, p. 221- 225.

⁴⁷ Hubbard, *Personhood*, p. 428, 442.

⁴⁸ For detailed information see, Dore, p. 27.

passed all the tests, its ability to gain a legal status depends on the legal order and political will granting it this right.

bb. Granting Legal Status to Artificial Intelligence Being Contrary to Human Interests

According to the view expressed as “human-centred approach” that adopts the utilitarian movement, even if artificial intelligent beings have all the qualities found in real people, these beings should not be granted personality rights. Because granting personality to artificial intelligence is incompatible with people’s interests, especially in terms of issues such as work, employment and security.⁴⁹

According to another view defended by the “human-centred approach”, granting personality to artificial intelligence beings that pose a great danger to humanity would not be a rational decision. Because if a self-aware super artificial intelligence is achieved and these beings are granted independent personality, people will face the danger of losing control and being ruled by a superior being. This view, also called the “paranoid human-centred approach”, argues that if an artificial entity that can become smarter than humans is given legal entity status, these entities can take control of the world.⁵⁰ On the other hand, it is also claimed that artificial intelligence can be programmed to not harm humans or to make moral decisions from a human perspective and potentially to pursue human interests rather than its own interests. However, such a situation would mean that artificial intelligence is not autonomous and therefore not a subject, but only a tool. Therefore, both examples require artificial intelligence to be considered as an object, not a subject.⁵¹

⁴⁹ Solum, p. 1260.

⁵⁰ Solum, p. 1261. According to a similar view, the next generation of artificial intelligence appears to be a serious candidate to replace humans as the dominant “species” with a highly advanced computer “self” capable of using machines and weapons. If normative personality is given to an artificial being with such a potential for danger, people must at least guarantee equal personal rights. Moreover, if artificial intelligence systems gain significant competitive advantages, it would be a more rational approach to reject or limit personhood in favor of an artificial being with superior capacities that could replace humans as the dominant species, even if it is possible to compete under the same conditions as equals. Hubbard, *Personhood*, p. 418.

⁵¹ Bertolini, p. 225; Solaiman, p. 33- 38.

On the other hand, according to the said view, granting personality to non-biological intelligence will negatively affect the law of liability as it will reduce the effectiveness of deterrence in terms of unlawful acts by exempting people from responsibility.⁵² For this reason, the aforementioned opinion argues that artificial intelligence systems, which are considered as objects before the law, should not be granted personality rights. However, it argues that a “software representation”, which has a limited legal status and is recorded in a special registry, can be established to represent the producer or user in case of damages and the parties in legal relations. According to this view, through the representation, while it can be ensured that contracts are made and fulfilled validly, the principle of legal security in the field of responsibility will also be realized by determining the upper limit of the liability to be assumed and the persons represented.⁵³

cc. Lack of Ability to Have Rights and Obligations

According to the approach that argues that legal personality should be recognized only by humans, in order for an entity to be accepted as a subject of law, it must be capable of having rights and assuming obligations, and therefore must have free will.⁵⁴ Both in doctrine and practice, in order for a being to cease being an object and be accepted as a subject before the law, that being must have the will to benefit from rights and fulfil its duties.⁵⁵ Because only with the existence of free will, it becomes possible to use the rights granted by the personality and to assume responsibility.⁵⁶ The understanding of personality in

⁵² Solaiman, p. 38.

⁵³ Bertolini, p. 242; Solaiman, p. 33- 38.

⁵⁴ Arie A. Covrigaru/Robert K. Lindsay, *Deterministic Autonomous Systems*, AI Magazine, Volume 12, Number 3 (1991), p. 117.

⁵⁵ According to this view, just as the concepts of fault and intent are fundamental elements in terms of legal and criminal liability, the existence of will is seen as a necessary condition for the acquisition of personality. In addition, the ability to exercise rights depends on the existence of will, which is a subjective faculty. . Zimmerman, p. 29

⁵⁶ According to a similar view in the doctrine, there is a close connection between human beings and being entitled to rights and fulfilling obligations. Because the concepts of being entitled to rights and obligations and personality are concepts identified with will and human beings. In this sense, man has personality because he has will. For this reason, the legal order cannot grant personality rights to beings that do not have will. Selin Çetin, “Yapay Zekâ ve Hukuk ile ilgili Güncel

question was developed by Canon jurists in the 13th century and is still accepted as a condition taken into account in judicial decisions.⁵⁷

On the other hand, it is claimed that granting legal personality to some organizations that do not have the ability to exercise their rights and fulfil their duties creates an exceptional situation in terms of the condition of having will. Namely, although companies do not have a living and physical existence and do not have a will, they have been granted personality rights by the legal system in order to support economic and commercial life. Thus, it is aimed to limit the legal liability and enable the real persons behind the legal entities to carry out their commercial activities more effectively and safely.⁵⁸ Based on this view, although some structures have been granted legal personality by the legal order for functional reasons and to meet people's needs, it is accepted that it is not appropriate to recognize artificial intelligent beings who do not have the ability to reflect their own will in legal life as subjects of law.⁵⁹

Tartışmalar, Yapay Zekâ Çağında Hukuk" (Current Debates about Artificial Intelligence and Law, Law in the Age of Artificial Intelligence), İstanbul, Ankara ve İzmir Baroları Çalıştay Raporu 2019, (Istanbul, Ankara and Izmir Bar Associations Workshop Report 2019), p. 54.

⁵⁷ In 2015, in the New York District Court in the USA, By Non-human Rights Project (NhRP/Non-Human Rights Project), In the lawsuit filed for the release of chimpanzees held for medical research at Stony Brook University,

^t has been argued that chimpanzees have their own "demands for justice" because, much like humans, chimpanzees have the basic personality traits of autonomy, self-awareness, and self-determination. Based on the Habeas Corpus, which is only valid for "legal persons" in the US Constitution, it was requested that the fundamental rights of freedom and equality granted to humans were also applied to chimpanzees and that they be released. The Court decided that only entities recognized as persons are capable of having rights and assuming obligations, while "objects" do not have these legal rights and responsibilities, and in this context, all animals are legally subject to property, regardless of their intelligence level and physical appearance. The decision also made a distinction between chimpanzees and legal entities and stated that companies with legal personality consist of people, therefore they can assume legal rights and duties, and therefore it is lawful for them to have legal personality. Solaiman, p. 26, 27.

⁵⁸ On the other hand, according to Beckman, when there is a legal liability for companies, the aim is to reach a decision or policy that can be attributed to the individual partners of the company, rather than the company as a representative of the group of people. Ludvig Beckman, "Personhood and legal status: reflections on the democratic rights of corporations", *Netherlands Journal of Legal Philosophy*, 1, 2018, p. 23.

⁵⁹ Zimmerman, p. 28

The approach that rejects granting legal personality to artificial intelligence argues that it is inappropriate to compare artificial intelligence to animals in terms of being able to act voluntarily. However, it accepts that the provisions regarding animals may be applied due to damages caused by artificial intelligence in the context of civil liability. Thus, it is claimed that damages caused by artificial intelligence can be compensated within the scope of strict liability, without the need for recognition of personality.

Basically, an animal is a biological entity with unique characteristics such as moody, docile and friendly. In this sense, it is different from legal entities and artificial intelligence systems in that it is a naturally living being and in terms of both the subjects it is trained in and the actions it carries out based on its own will. The responsibility of the persons who undertake the care and management of the animal can be invoked due to the damage caused to third parties due to the nature of the animal and its irregular behaviour that may cause behavioural deviation. Likewise, there is no obstacle for the manufacturer, owner or user of artificial intelligence systems to be held responsible for the damage caused by artificial intelligence. However, although artificial intelligence and animals are similar in some aspects, these similarities are insufficient to recognize personality in both entities. As a matter of fact, the lawsuit regarding chimpanzees in the USA was rejected on the grounds that chimpanzees do not have the capacity to have rights and assume debts.⁶⁰

dd. Personality Not Being a Necessary Condition for Solving Problems Related to Artificial Intelligence

According to this view, granting personality to artificial intelligence in order to determine legal liability is not a sine qua non solution. Because legal problems arising from artificial intelligence can be resolved without granting personality to artificial intelligence.⁶¹

⁶⁰ Bertolini, p. 227; Solaiman, p. 12- 34; Peter W. Singer, *Wired for War: The Robotics Revolution and Conflict in the 21st Century*; Penguin Press: USA, 2009, p. 415. Zimmerman, p. 33.

⁶¹ According to Pagallo, wherever there is a legal responsibility, there is a legal personality. However, considering the scope of responsibility that today's artificial intelligence technologies have, it is not necessary to grant full legal personality

On the other hand, granting an independent personality to artificial intelligence entities will serve to limit the persons to whom responsibility can be applied, rather than providing an important solution for compensation for damages arising in debt relations. That is, as long as artificial intelligence entities do not earn any income due to the tasks they perform, even if they gain personality rights, the damages that will occur will be covered by the people or companies behind these technologies. At the same time, if a fee is decided for the activities of artificial intelligence, this will mean the creation of a tax for users.⁶² Based on this, it is stated that artificial intelligence does not need to gain legal personality in order to determine its legal responsibility and take legal action, because artificial intelligence can be granted rights limited to these functions without gaining personality status.

In addition, it is claimed that the fact that legal systems provide legal entities for “synthetic assets”, as in companies, may lead to the abuse of the rights granted to these synthetic assets.⁶³ Namely, when artificial intelligence is given personality, it can turn into a shield of irresponsibility for the real people behind this artificial intelligence. However, it is stated that lack of any regulation may lead to the emergence of a class of irresponsible perpetrators consisting of robots and artificial intelligence.⁶⁴

Although it accepts that some problems may be encountered in legal relations due to the unique characteristics of artificial intelligence, the view argues that granting personality status to artificial intelligence is not a *sine qua non* for the solution of the mentioned problem, and proposes different solutions in order to support this claim. Accordingly, granting a dependent and limited legal status, as in a representation relationship, or registering artificial intelligence robots and allocating a certain capital to them, as in companies, will eliminate the need to

to artificial intelligence. As a matter of fact, the dependent and limited forms of legal status that representatives have within the framework of a contractual debt relationship can also be applied to artificial intelligence entities in a similar legal situation. Pagallo, *Legal Personhood*, p. 5.

⁶² Bertolini, p. 242; Solaiman, p. 33

⁶³ Serozan, *Medeni Hukuk*, p. 495.

⁶⁴ Pagallo, *Legal Personhood*, p. 4; Bryson/Mihailis/Grant, p. 275 vd.

apply to artificial intelligence in the context of legal liability.⁶⁵ Thus, the financial positions of such smart machines will be made transparent.⁶⁶

b. Overall Evaluation

In summary, the view against granting personality to artificial intelligence sees personality as a set of values unique to humans and acquired from birth. It also argues that people do not have the authority to dispose of these values.⁶⁷ This human-centred approach, which considers personality as an integral element of fundamental rights and duties, accepts that artificial intelligence does not have the ability to fulfil these rights and duties.⁶⁸

On the other hand, the thoughts and behaviour of biological beings, especially humans, are influenced not only by the rational analysis of sensory input, but also by the endocrine system and various chemical messages over thousands of years. Humans have a unique level of intelligence, communication, self-awareness, and emotion. Even if intelligent machines devoid of these abilities may achieve emotion and self-consciousness in the future, they currently lack comprehension and feelings. Therefore, they can only imitate emotions and self-consciousness.⁶⁹ The opinion in question regards the legal personality recognized for organisations, which has been adopted by all legal systems, as acceptable on the grounds that these organisations are actually composed of people, their capacity to act is exercised through humans, and the rights and duties related to their personalities basically refer to the rights and duties of the people behind them. In addition, when the ability of artificial intelligence to make independent decisions on its own is taken as a criterion, it is claimed that artificial intelligence does not meet the necessary conditions in terms of its level of development.⁷⁰

In our opinion, in today's world where a rapidly digitalizing social life prevails, the justifications based on the approach that rejects

⁶⁵ Pagallo, *Legal Personhood*, p. 5; Ersoy, p. 86; Kılıçarslan, p. 378.

⁶⁶ Pagallo, *Legal Personhood*, p. 5.

⁶⁷ Friedmann, p. 50 - 51.

⁶⁸ Solaiman, p. 11; Çetin, *Yapay Zekâ ve Hukuk ile İlgili Güncel Tartışmalar*, p. 54

⁶⁹ Hubbard, *Personhood*, p. 442.

⁷⁰ Solaiman, p. 35; Hubbard, *Personhood*, p. 442; Pagallo, *Legal Personhood*, p. 9.

personality are far from being rational and applicable. Because in a world where machines with autonomy and learning features will dominate, it will be inevitable for smart machines to damage the assets or personal assets of third parties while performing these tasks. This situation will bring about the necessity of establishing a normative regulation of the legal personality and liability of artificial intelligence. However, the legal personality to be granted to artificial intelligence should not be based on a system of values identical to or competing with humans, but on a personality model that is compatible with the unique characteristics of smart machines, reflects the algorithmic structure and autonomy features, and is limited to its fields of activity.

The View That Accepts Granting Legal Personality to Artificial Intelligence

In our world, where the most advanced cognitive technological designs are being implemented one by one and moving with exponential acceleration towards the cybernetic society, scientific opinions and theories advocating that the new generation artificial intelligence technology should be given a legal status set off a leverage effect. As the effectiveness of non-biological intelligence on humans and society increases, the demands and expectations regarding the determination of the legal status of artificial intelligence also increase.

The approach advocating granting legal personality to artificial intelligent beings is, as a rule, based on the legal and formal aspects of personality, and accepts that personality can be granted to these beings if social acceptance occurs and is compatible with legal policy.⁷¹

Scientific views, which support the process developing at the theoretical and academic level within the framework of legal personality regarding the need to grant personality to non-biological intelligence and see it as a necessity to grant personality to artificial intelligent beings, generally act from three basic points. The first of these is the difficulties encountered in determining legal liability for damages arising from the operation of artificial intelligence due to its unique technical and cognitive features. Secondly, it is the opinion that viewing the new generation artificial intelligence, which is a much

⁷¹ White, p. 74- 75.

more complex system compared to known machines or computers, has human-like features and cannot be set to an upper limit for its progress potential, as a subject of property law, is incompatible with the modern understanding of science. Finally, it is the aim of ensuring that humanity benefits from the qualities and achievements specific to these systems at the highest level by giving them a legal status rather than ignoring artificial intelligence-based assets.⁷²

Since smart software and artificial intelligence technologies are systems that are dispersed and distribute liability to different areas, it seems very difficult to determine who gave commands or training to the software and algorithms that constitute the unlawful act. In addition, determining whether there is an error in the production, design or use of artificial intelligence-based systems requires a complex process. This situation causes a legal uncertainty to arise in terms of directing responsibility and accountability.⁷³ Because, if artificial intelligence causes harm, the injured person faces the stages of choosing and making decisions among many factors such as the producer, employer, algorithm or software responsible, user or the artificial intelligence itself. Moreover, the complexity of the interaction between humans and artificial intelligence and multiple and distributed liability situations based on multiple actions of both elements may eliminate the possibility of compensation for damage. Furthermore, it will be impossible to determine legal liability in the event of damage occurring due to the actions and behaviours of artificial intelligence that cannot be attributed to elements such as the producer, user, algorithm or software responsible.⁷⁴ In this context, giving personality

⁷² Solum, p. 1252; Teubner, p. 6; Zimmerman, p. 21; Bacaksız/Sümer, p. 145 - 146.

⁷³ Pagallo, *Legal Personhood*, p. 6; Bayamlioğlu, p. 136. For example, artificial intelligence, which is a conscious machine that hears that its user needs to access a document from the digital environment, decides to acquire the document under the influence of the social environment and give it to the user as a birthday gift. Acting within the framework of this decision, artificial intelligence also performs various prohibited actions in the digital environment in order to access the document without paying a fee, obtains the document and gifts it to the user. In such a scenario, it is very difficult to hold the user, designer or manufacturer responsible. Because in the mentioned incident, artificial intelligence with advanced autonomy is equal to humans in terms of being held responsible for illegal actions. Calverley, p. 533.

⁷⁴ Pagallo, *Legal Personhood*, p. 6; Ersoy, p. 78.

to artificial intelligence will eliminate the complexity and uncertainty of accountable persons and ensure that judicial proceedings for compensation for damage proceed more quickly and safely.

This uncertainty clearly reveals that the new generation problems related to artificial intelligence entities, which have a very different systematic and logic than previous technological designs, cannot be solved by traditional methods that are incompatible with the nature of this technology.

On the other hand, due to the development process through machine learning, artificial intelligence enables the emergence of more complex cognitive structures as it constantly increases its knowledge and skills as a result of its interaction with the living creatures in the environment. In the near future, it is clear that such structures will need a status in social life, given the fact that the new generation of human-like artificial intelligence, which is predicted to be produced based on a modelling that imitates biological human algorithms, will be more integrated with the social structure.⁷⁵ For these reasons, the legislator has an important responsibility in producing innovative and sustainable solutions that are compatible with the new generation artificial intelligence technologies, which have their own unique characteristics and working systems.

Apart from this, granting legal personality to non-human beings will greatly increase the capacity of contemporary societies to benefit from cognitive technology. For example, the widespread use of electronic or smart contracts will provide significant savings in transaction costs and contribute to safer and faster execution of transactions. In this context, the “The Uniform Electronic Transactions Act” (UETA), adopted by forty-seven states in the USA, Columbia and the Virgin Islands, allows contracts to be made by machines that function as electronic representatives of the parties. The regulation considers all claims that the contract was not established due to the lack of mutual will of the parties, who are real persons, during the establishment of the contract, as invalid. When it comes to the participation of machines in the contract, it is assumed that the necessary will arises from the

⁷⁵ Ugo Pagallo, *Even Angels Need the Rules: AI, Roboethics, and the Law*, The Authors and IOS Press, 2016, p. 209. doi:10.3233/978-1-61499-672-9-209AI.

programming and use of the machine. This issue is covered in Section 14 of the Electronic Transactions Act, titled “Automated transactions”. According to the regulation, “A contract is formed by the interaction of the parties’ electronic representatives, even if the parties are not aware of or have not reviewed the actions of their electronic representatives or the resulting terms and agreements.”⁷⁶

In the Electronic Transactions Law, it is stipulated that when electronic representatives interact to make a contract without any human knowledge or participation, no objection can be raised regarding the lack or absence of will by real persons regarding this contract, and the provisions and consequences of the contract will belong to the real person behind the artificial intelligence.⁷⁷

Thus, it is aimed to use electronic contracts more widely and reduce transaction costs in today’s information age. In addition, allowing contracts to be made through interaction between electronic representatives constitutes an important step towards transferring electronic personality to the real world.⁷⁸

⁷⁶ <http://euro.ecom.cmu.edu/program/law/08-732/Transactions/ueta.pdf>.

⁷⁷ In German Law, it is accepted that if the electronic representative concludes a contract with his own suggestion or acceptance, the terms and consequences of the contract will belong to the real person behind the artificial intelligence, even if the conclusion of the contract is decided autonomously by the artificial intelligence by evaluating different options. However, in this case, the basis of legal liability varies depending on whether the artificial intelligence decides and carries out the debt-generating transaction autonomously, as a result of its own will, or whether it acts within the framework of the will of the real person represented. In this context, the basis of the legal liability arising from the operations of an autonomous artificial intelligence, which has the ability to learn and improve itself as a result of its own experiences, and the operations of a system that does not have the ability to make autonomous decisions, will be different. Accordingly, in the debt relationship arising as a result of the actions of autonomously decision-making artificial intelligence, there will be a liability or representation relationship for the acts of assistant persons within the scope of contractual liability. However, since the transactions made through non-autonomous artificial intelligence, which is considered as property subject to ownership, are essentially carried out by the real person behind the artificial intelligence, the legal liability as a party to the debt relationship will belong to the real person within the framework of general provisions. Solum, p. 1284; Teubner, p. 10.

⁷⁸ <http://euro.ecom.cmu.edu/program/law/08-732/Transactions/ueta.pdf>. SET.23.8.2020. Also, for legal issues that may arise in this regard, see, Teubner, p. 10. Bayamlıoğlu, p. 132.

In Turkish Law, there is no regulation that allows any electronic or non-biological entity to perform legal transactions on behalf of a real or legal person and for the provisions and results to arise in the legal field of these persons. Additionally, there is no separate type of contract that can be described as an “electronic contract”. Although it seems that the concept of “electronic contract”⁷⁹ is included in the doctrine as a separate contract type, in reality these contracts do not constitute a separate and unique contract category. Because the Turkish Code of Obligations (TBK) is shown as the basis for electronic contracts. Article 4/2 contains a provision stating that only communication devices such as telephones and computers can be used during the establishment of the contract, and that a suggestion made instantly and uninterruptedly online during direct communication with such devices will be deemed to have been made among the present. Therefore, the phrase “electronic” in the context of electronic contracts does not have a distinctive feature regarding the content, elements or parties of the contract. This phrase only indicates that electronic means were used in the establishment of the contract. For this reason, it is not deemed appropriate to consider contracts in which these tools are used as a separate and unique contract category under the name of electronic contracts.⁸⁰

In Turkish positive law, within the framework of the rules regulating debt relations, there are no provisions regarding non-biological intelligent beings as a subject of law. However, it is necessary to make some pioneering legal regulations in the face of radical and comprehensive changes that will be initiated in many fields, including law, by digital transformation and new generation artificial intelligence systems, which are inevitable in the near future. Thus, the transformation in question will be adopted more quickly by the society. Because it seems difficult to resolve disputes arising from contracts made through artificial intelligence and smart

⁷⁹ For detailed information about the concept and types of electronic contracts, see Çiğdem Kırca, *İnternette Sözleşme Kurulması, Banka ve Ticaret Hukuku Dergisi*, 2000, Cilt XX, N. 4, p. 100.

⁸⁰ Gamze Turan, *Elektronik Sözleşmeler ve Elektronik Sözleşmelere Uygulanacak Hukukun Tespiti, TBB Dergisi*, N. 77, 2008, p. 92; Muzaffer Şeker, 6098 sayılı Yeni Türk Borçlar Kanunu’na Göre İnternet Üzerinden Sözleşmelerin Kurulması, *İstanbul Ticaret Üniversitesi Sosyal Bilimler Dergisi*, Y.11, I. 22, 2012/2, p. 131.

software with the provisions in the Turkish Code of Obligations. For example, if a software error occurs during the establishment of the contract, this error will be taken into account only to the extent that it can be considered as a fault of the real person operating the machine, according to the Turkish Code of Obligations. However, errors arising from smart software cannot always be evaluated within the framework of the provisions of “fault”, and since smart software is not responsible for the will subject to the transaction, it does not seem possible to accept any software errors as a defective intention that affects the validity of the transaction. For this reason, the most rational approach to resolving disputes that may arise on issues such as the establishment of a contract, cases of defective intention, agency and power of attorney will be to grant a legal status to smart software or artificial intelligence.⁸¹

On the other hand, granting a legal entity-like status to non-biological autonomous entities, as is the case with associations and endowments, will pave the way for these entities to be legally allocated to a permanent purpose and to serve humanity. Moreover, it is accepted that one of the most successful strategies for coping with the uncertainty that will be experienced whenever non-human beings are encountered at different layers of the social structure is their personification.⁸²

Those who advocate the idea of granting personality rights to artificial intelligence agree on the point of giving artificial intelligence a legal status in terms of the principle of legal security and accountability, but they differ on the methods of doing so. In this context, according to one view, in order to give artificial intelligence a status before the law, there is no obligation to grant it a right and capacity to act similar to real persons.⁸³ It is deemed sufficient for artificial intelligence to have the authority and responsibility to perform its operations within the scope of its duties and field of work. For example, it is argued that the financial position of such smart machines can be made transparent without resorting to any legal entity, by registering artificial intelligence

⁸¹ Bayamhođlu, p. 133- 134.

⁸² Teubner, p. 6.

⁸³ Bryson/Mihailis/Grant, p. 273.

or giving them capital, as in companies.⁸⁴ Apart from this, within the framework of the view that artificial intelligence should be given a legal status, models such as legal entity-like personality, electronic personality, non-human person, limited-purpose personality and semi-personality are proposed.

CONCLUSION

There is no hesitation that systems with a limited field of activity and autonomy, defined as narrow or weak artificial intelligence, should be accepted as objects before the law, depending on these characteristics. On the other hand, the level of success reached by cognitive technology today has also enabled the development of autonomous artificial intelligence, which can learn from its own experiences through different algorithmic structures and complex software and machine learning, and can act independently without any external intervention. The autonomous decisions and actions taken by these entities while performing the duties defined for them sometimes lead to legal liability in terms of damaging people's property or immaterial rights values or causing a breach of duty in a debt relationship. In this respect, today, there is a need to develop a unique personality model for artificial intelligence beings with strong autonomy features.

Significant results have been reached regarding the granting of legal personality to non-biological beings in the light of multifaceted scientific studies carried out by different disciplines, both in Turkish doctrine and comparative law. Accordingly, the level of development in artificial intelligence technology and robotics reached today cannot carry the theses of granting personality rights to these beings beyond the conceptual dimension. However, it seems inevitable that artificial intelligence systems, which are based on modelling that imitates biological human algorithms and have a great potential for progress, will transform into a humanoid structure in the near future.

Various criteria have been determined in the doctrine for granting personality rights to artificial intelligence beings. It is widely accepted that if artificial intelligence is determined to meet these criteria, a

⁸⁴ Pagallo, *Legal Personhood*, p. 5.

legal status should be granted. These determined criteria are abilities and capacities that are agreed to be unique to humans, such as sense of self-interest, free will, consciousness and self-awareness. These are the qualities that describe the moral person in terms of moral philosophy. However, the personality model intended for the new generation artificial intelligence should not be a status identical to the moral personality of real people, but a formal personality type that is compatible with the characteristic and unique structures of these beings. As a matter of fact, the personality type adopted by contemporary legal systems for legal entities, which are structures that recognize personality other than people, is a formal personality model, purified from human characteristics.

Today, considering the impact of non-biological intelligence on human and social activities and the level of development, it can be seen that giving these entities a legal status has become an important need. However, the status in question should not be a personality model that offers a full set of rights and obligations, as in real persons. This status should be a formal personality that allows artificial intelligence to acquire rights and assume obligations, be held legally responsible and accountable for the transactions it carries out, and provides transparency and trust in its functions, provided that it is limited to its fields of activity. Moreover, according to the moral personality view, even if all the qualities required for legal personality are found in artificial intelligent beings, these will not be sufficient for these beings to gain a legal status. Because throughout the historical process, in all civilizations from past to present, the sole criterion for granting personality status to beings other than humans has been human interests, not the level of physical and psychic development.

The view, expressed as the human-centred approach and reflecting a pragmatic perspective, accepts that the determining factor in giving personality to non-biological intelligence or any synthetic structure is that human interests justify such a decision. As a matter of fact, when approaching the issue in terms of legal entities, which are the only structures recognized with legal personality other than people by contemporary legal systems, the dominant factor in granting legal personality to associations, endowments or companies was not the characteristics of these structures, but the idea of meeting social needs.

In this context, considering the common characteristics of all entities that have acquired legal personality, it can be seen that granting personality to these entities is based on either humans themselves or entities that contribute significantly to humans in social and economic life.

Considering the progress potential of the new generation artificial intelligence, which constantly improves itself with the machine learning method and has the capacity to learn through its own experiences, it will go beyond the designs and targets set for them by interacting with people and the environment in extremely complex ways. At the end of this process, artificial intelligent beings will become social actors and appear in very different appearances in politics, economy, law and many other fields. When this process of change reaches a certain stage, the personification of artificial intelligence systems will become a social reality and a political necessity. Theories about granting legal status to non-biological intelligent beings, which continue at the conceptual level until they become a social reality and a political necessity, will turn into pragmatic needs after this stage. This will enable the implementation of normative regulations regarding the legal recognition of artificial intelligence entities by activating the human-centred legal system based on human interests.

Legally accepting a non-human being as a person will require extensive codification in the context of integrating these beings into the legal system. In this context, legislative changes and new legal regulations will be needed on many issues such as recognition of personality by the legal system, determination of legal action capacity, attribution of rights and duties, determination of administrative and judicial procedures and principles, and ensuring the participation of these non-human beings in political, economic and cultural life.

Giving artificial intelligence entities a legal status also requires determining a specific personality model for these entities. It would not be a sustainable approach to determine the model to be chosen by a method envisaged based on the unique needs of the past and the conditions and functioning of that day for groups of people and property such as companies, associations, foundations, various institutions and organizations. For this reason, the personality model to be preferred

must have a design and content that is compatible with the unique qualities of the new generation artificial intelligence technology, which has no similar application or example before. In this sense, no matter how much it is developed, it does not seem possible to design the world of the future with models that are legal entities or their versions. In this respect, we believe that the “electronic personality” model envisaged in the “European Parliament Resolution of 16 February 2017 with Recommendations to the Commission on Civil Law Rules on Robotics” is more compatible with the unique and innovative structure of artificial intelligence and robotic technologies. In addition, the “electronic personality” model seems to be an appropriate choice because it reflects a type of personality not in a philosophical sense, but in a formal and legal sense. Furthermore, the “electronic personality” model is considered to be feasible and rational in terms of the European Parliament Resolution’s potential to systematically reveal the general principles that will shed light on the establishment of international norms in the field of artificial intelligence and guide the studies carried out on these systems. On the other hand, the “limited purpose personality” model, which emphasizes efficiency and utilitarianism, will provide significant gains, especially in terms of economic and commercial life, if it is sufficiently developed and systematized.

As a result, legal rules are a set of rules that aim to protect social life and meet human needs, and in this context, regulate the relations between individuals and society. Law is also responsible for overseeing the changes and transformations that occur in the structures or social relations that make up society and attaching them to a normative status. In this sense, the law also has important functions to take measures to ensure social order and to coordinate the changes and transformations in social life. Therefore, in the information age we are in, the impact of artificial intelligence entities on human and social activities and the cybernetic social structure that artificial intelligence promises for the near future make these entities the subject of law. The duty of the legal system in the face of changes and expectations in the social structure and new formations in social life is to realize the principle of legal security by making the necessary regulations and ensuring predictable certainty. In this context, providing a legal status to non-biological intelligence, which has become a social reality today

and is certain to develop greatly in the near future, has become one of the important duties of law. In determining legal status, the legal and formal understanding of personality should be taken as basis, rather than the deep philosophical theories and ethical discussions that do not directly contribute to the solution of the mentioned problem. In addition, the personality model to be attributed to artificial intelligence should be an innovative and applicable structure that is compatible with the unique characteristics of these systems and limited to their fields of activity, rather than a set of values that are identical to or competing with humans. In this sense, we believe that the “electronic personality” or “limited purpose personality” model would be the most rational choice for artificial intelligence beings.

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